هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

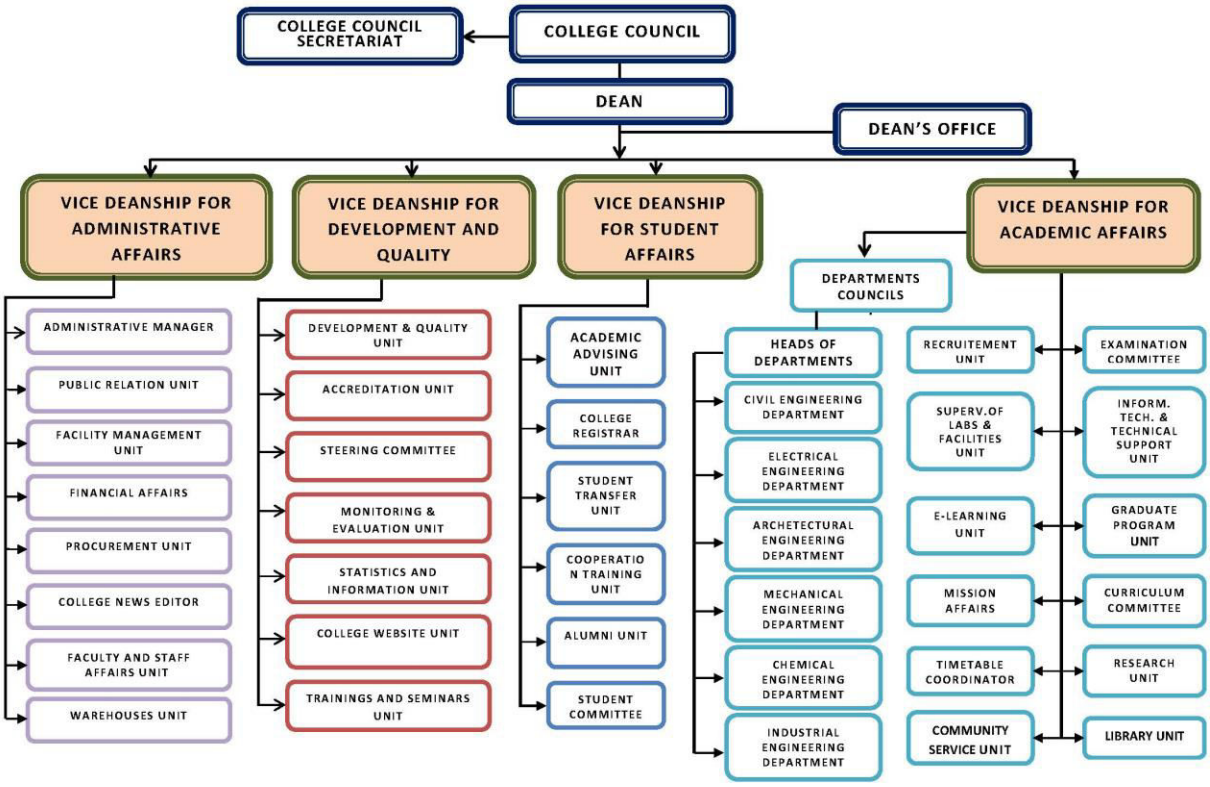
ATTACHMENT 3.

T4. PROGRAM SPECIFICATIONS

National Commission for Academic Accreditation & Assessment

Program Specifications

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

Institution: **Najran University** Date of Report: **24/03/2017**
College/Department: **Engineering/ Electrical**
Head of Department: **Assoc. Prof. Dr. Abdullah Al-Wadie**
Insert program administrative flowchart College of Engineering flowchart:    **Figure 1**. College of Engineering flowchart Electrical Engineering Department flowchart:

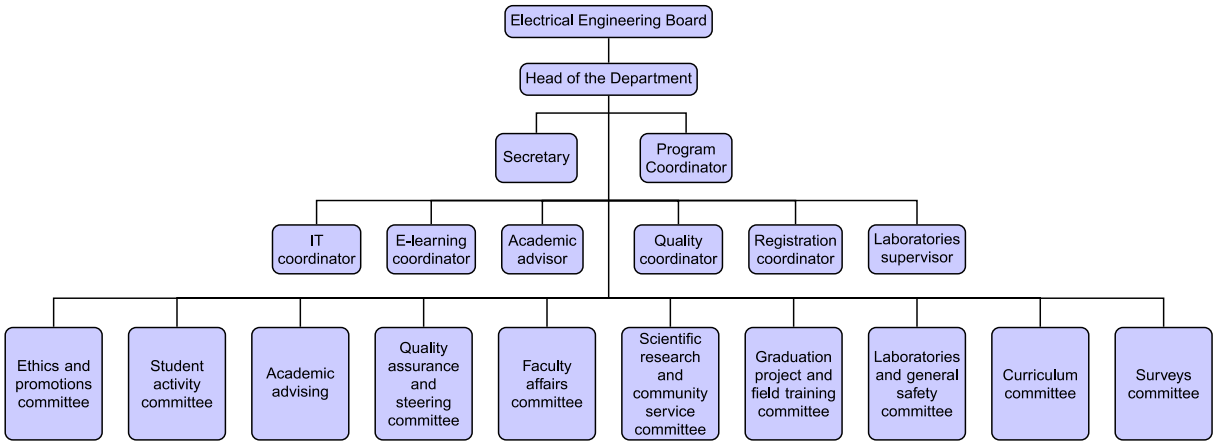


Figure 2. Electrical Engineering Department flowchart

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 **2016/2017**

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 / College 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 providedistinctiveeducationthatmeetstheneedsofsocietyandthelabormarket and contributeeffectivelytothesustainabledevelopmentthroughappliedresearch,theoptimal useofmoderntechnologiesandtheactivepartnershipatthelocal,regionalandglobal levels."

ThevisionandmissionofNUareposted onitswebsiteat:
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.

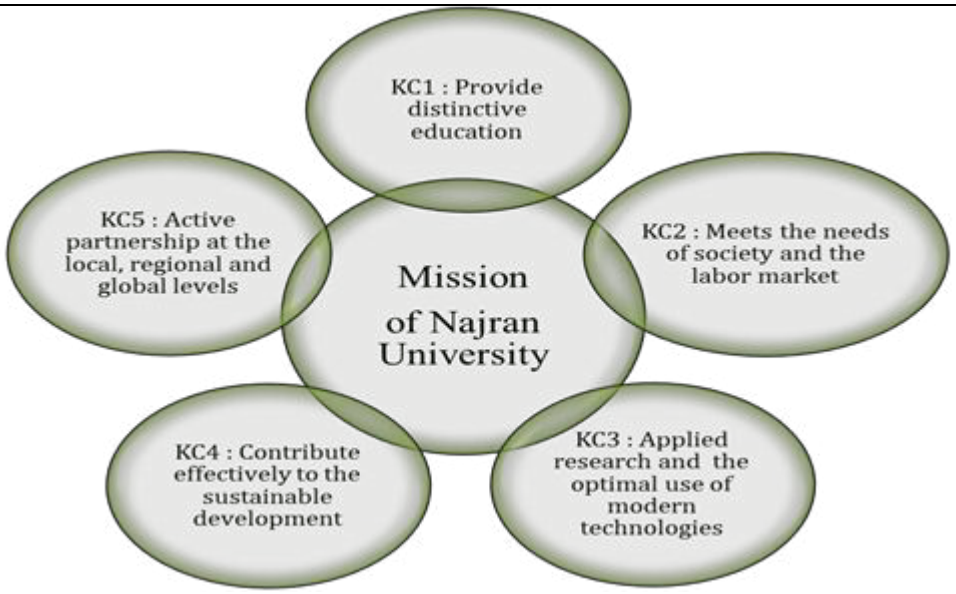


Figure 3. Analysis of the mission of Najran University into five key components

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

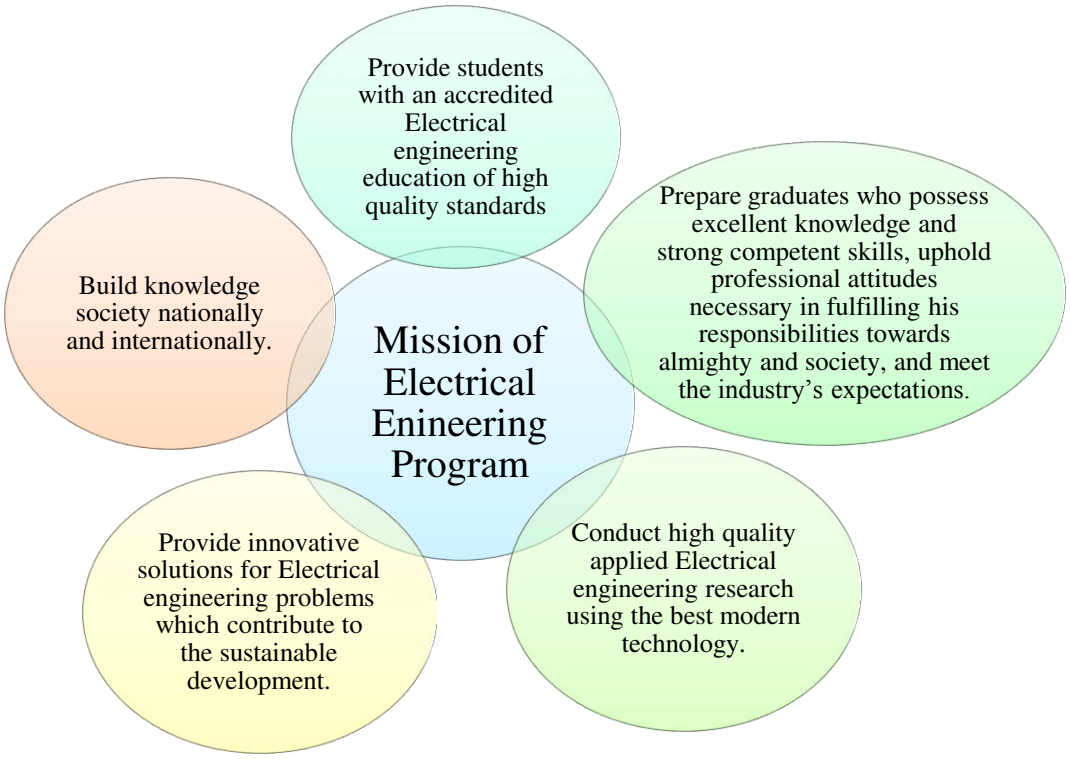


Figure 4. Analysis of the mission of Electrical Engineering Program into five key components

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 Program Goals (eg. long term, broad based initiatives for the program, if any)

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:Meetindustry'sexpectationsin electrical engineering with excellent communication and leader ship 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:Up hold 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).

3. List major objectives of the program within to help achieve the mission. For each measurable objective describe the measurable performance indicators to be followed and list the major strategies taken to achieve the objectives.

Goals and Objectives	Major Strategies	Measurable Indicators
Goal #1 Provide high quality electrical engineering education recognized nationally and internationally **Objectives:** **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	Periodic review and assessment of EE curriculums in consultation with industry to obtain a distinct study plan.	• 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	• The number of staff attending training courses
	Compare EE curriculums with national and international universities	• Percentage of matching between EE curriculum with national and international universities
	Recruit qualified staff	• 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	• Percentage of graduates of Bachelor's degree enrolled in postgraduate study.
	Obtaining national and international academic accreditation for the EE program.	• 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	• Percentage of graduates of Bachelor's degree employed within 6 months of graduation.
Goal #2: Conduct excellent applied scientific electrical engineering research, contribute to solving electrical engineering problems, and meet nation's needs	Research cooperation	• Number of joint research and agreement with other research institutions
	Distinct scientific and academic promotion for students and EE staff	• The ratio of articles published in scholarly journals or presented at conferences to the number of EE staff
	Training staff for preparing research proposals	• Number of staff attend training courses for research methodology and preparing research proposal • Number of supported research

Objectives: **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.	Involve student in research activity conducted by the staff in the EE program	• Number of student enrolled in research activity
	Planning of research projects	• Research plans
	Start postgraduate program in electrical engineering	• Postgraduate program progress development
Goal #3: Engage with his profession and community and continue to develop professionally, socially, and personally. **Objectives:** **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 of the Kingdom	Engagement and involvement of EE staff and students in professional activities or professional societies	• The number of EE staff and students participating in professional development activities or members in professional societies
	provided consulting and community service activities	• Number of community service programs conducted by the EE program • Number of EE staff and student involved in community service programs
	Strengthen EE program relation with national and international organization partnerships	• Number partnerships with national and international organization
	Increase the community awareness on the roles and functions of the program	• Percentage of members from program advisory board contain representatives from community

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**
1st 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 Electrical Engineering	Required	3	Department
	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:

a. 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 9thsemester 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:
    - Report (General Organization, content, level type, method)
    - The Visual presentation of the project (the content, conclusions, clarity, thoroughness, the language, the degree of literacy, time commitment)
    - The level of knowledge of the contents of the project (answered questions)
    - 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.	- 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.	- Electrical engineering programstaff use a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
1.2	To recognize	- Lectures, which include	- Electrical engineering programstaff use a

	the knowledge of contemporary issues in electrical engineering.	explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 335EE-3 introduction to microprocessors, 331EE-3 logic design, 321EE-3 logic design laboratory, 215EE-3 electromagnetism (II), 341EE-3 communications principles, and 47EE-3 digital signal processing heavily use these teaching strategies.	variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
1.3	To develop and	- Lectures, which include	- Electrical engineering program staff uses

	use techniques and skills using modern engineering methods and tools needed in electrical engineering practices.	explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II),334EE-1 basic electronics laboratory, 416EE-3 electrical measurements, 332EE-1 logic design laboratory, and 335EE-3 introduction to microprocessors heavily use these teaching strategies.	a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
2.0	**Cognitive Skills**		
2.1	To identify and	- Lectures, which include	- Electrical engineering programstaff use a

	apply knowledge of mathematics and sciences and engineering in electrical engineering problems.	explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 416EE-3 electrical measurements, 335EE-3 introduction to microprocessors, 331EE-3 logic design, and 428EE-3 applied control heavily use these teaching strategies.	variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
2.2	To design and conduct experiments, as	- Lectures, which include explanation of basic concepts, discussion of textbook contents,	- Electrical engineering program staff uses a variety of assessment methods to prove the effectiveness of teaching strategies

	well as to analyze and interpret data required for solving electrical engineering projects.	problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 335EE-3 introduction to microprocessors, 342EE-1 communications lab, and 351EE-3 computer programming for electrical engineering heavily use these teaching strategies.	and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
2.3	To design an optimum electrical engineering system/compon	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming,	- 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.

	ent to meet desired needs with realistic constraints.	demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 215EE-3 electromagnetism (II), 332EE-2 logic design laboratory, and 335EE-3 introduction to microprocessors heavily use these teaching strategies.	For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
2.4	To identify, formulate, and solve electrical engineering problems and to evaluate and synthesize information in	- 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	- 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**

	order to provide best alternative solutions.	individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 416EE-3 electrical measurements, 332EE-2 logic design laboratory, and 321EE-3 signals and systems analysis heavily use these teaching strategies.	- Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
3.0	**Interpersonal Skills & Responsibility**		
3.1	To function effectively on multi-disciplinary electrical engineering teams.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes	- 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**

		individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Coverage of contemporary issues through discussions in classrooms. - Courses like 491EE-2 graduation project (I), and 492EE-3 graduation project (II) heavily use these teaching strategies.	- Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
3.2	To communicate effectively, prepare professionally written materials, graphical communications and deliver professional oral and written presentations.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements:	- 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

		course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 416EE-3 electrical measurements, and 204GE-3 computer programming for engineers heavily use these teaching strategies.	questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
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.	- 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,	- 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

		and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, and 437EE-3 digital signal processing heavily use these teaching strategies.	final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
4.2	To recognize the need for and an ability to engage in life-long learning and continuing education of professional/engineering skills.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for	- 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,

		homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 428EE-3applied control, 341EE-3 communications principles, 336EE-1microprocessor and microcontroller lab, and 324EE-1 automatic control lab heavily use these teaching strategies.	programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
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 **NQF Learning Domains and Learning Outcomes**	**140TEC-3**	**140MATH-2**	**140SKL-2**	**140ENGG-2**	**141ENGG-2**	**142ENGG-2**	**143ENGG-2**	**150MAN-1**	**150MATH-4**	**150SKL-2**	**150ENGG-3**	**151ENGG-2**
1.0	**Knowledge**												
1.1	To possess the broad education necessary to understand the impact of engineering	I	I							I			

	solutions in economic, environmental and societal context, and to improve the quality of life.												
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 recognize the impact of liability issues in electrical engineering projects and installations.												
4.2	To recognize the need in life-long learning and to engage in continuing education of professional/engineering skills.												
5.0	**Psychomotor**												
5.1	Not available												
5.2													

FIRST YEAR COURSES

	Course Offerings NQF Learning Domains and Learning Outcomes	101CHM-3	104PHIS-4	106MATH-3	107MATH-3	107ENG-3	111ISL-2	101GE-3	203MATH-3	102GE-2	108ENG-2	105PHIS-4	
1.0	**Knowledge**												
1.1	Recognize the broad education necessary to understand the impact of engineering solutions in economic, environmental and societal context, and to improve the quality of life.												
1.2	To recognize the contemporary issues in electrical engineering.												
1.3	To use techniques, skills, and modern engineering tools necessary for electrical engineering practices.												
2.0	**Cognitive Skills**												
2.1	To identify and apply knowledge of mathematics and sciences and engineering in electrical engineering problems.												
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.												
3.2	To communicate effectively, prepare professionally written materials, 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 and installations.												
4.2	To recognize the need in life-long learning and to engage in continuing education of professional/engineering skills.												

5.0	**Psychomotor**												
5.1	Not available												
5.2													

SECOND YEAR COURSES

	Course Offerings **NQF Learning Domains and Learning Outcomes**	**112ISL-2**	**204MATH-3**	**204GE-3**	**211EE-3**	**212EE-3**	**203GE-3**	**214EE-3**	**215EE-3**	**213EE-1**	**324STAT-3**	**201ARAB-2**	**205GE-3**	**254MATH-3**
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.								P					
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.					P		A	P	A				
2.0	**Cognitive Skills**													
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 **NQF Learning Domains and Learning Outcomes**	**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			A			A	I		A		P		A	P		

	engineering projects.																
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, graphical communications and deliver professional oral and written presentations.							I	I	A		I		A			
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 **NQF Learning Domains and Learning Outcomes**	**426EE-3**	**416EE -3**	**437EE-3**	**422EE-3**	**202ARAB-2**	**492EE-3**	**407GE-2**	**427EE-3**	**417EE -3**	**428EE-3**	**114ISL-2**	
1.0	**Knowledge**												
1.1	To possess the broad education necessary to understand the impact of engineering solutions in economic,		I		P		I		P				

	environmental and societal context, and to improve the quality of life.												
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 problems.	A	A	P	A		P		A	A	A		
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:

a. Attendance.
b. Progression from year to year.
c. 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 precent of the lectures and laboratory sessions assigned for each course), the student will be barred from continuing the course and will be denied entrance to the respective final examination. A student who is denied entrance to the examination due to absences is considered to have failed that course and is given the grade DN in the course."

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

Good Standing: This status is assigned to all students at the beginning of their course of study. Students are expected to maintain this standing till their graduation. This involves a minimum grade point average (GPA) of 2.00 out of 5.00 in the student's cumulative and semester GPA.

Honors Degree: The first-class honors degree will be achieved by the students who score a cumulative grade from 4.75 to 5.00 upon graduation. The second-class honors degree will be to those who attain a cumulative grade between 4.35 and 4.75 upon graduation.

*Source:*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 remembers has to review the CVs of the applicants according to their background, teaching experience and to the required field in the program.
- High experience level and good qualifications of the applicants are selected to join the teaching staff members in the program.

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.

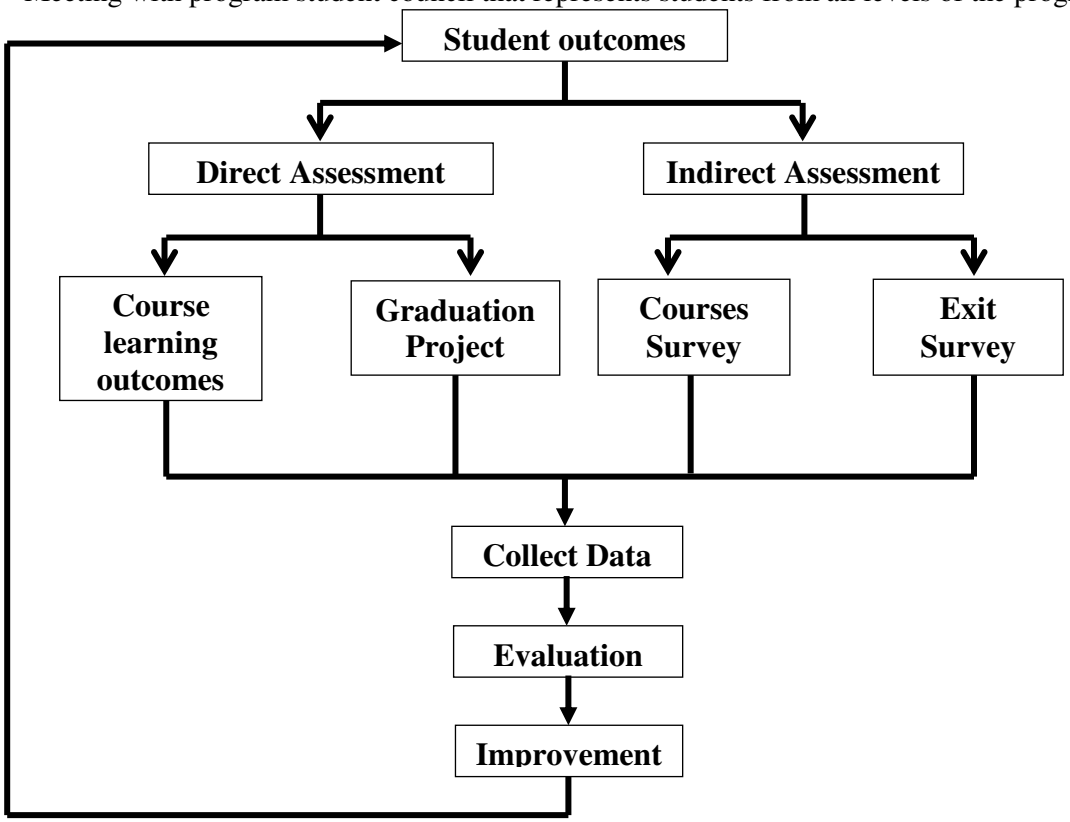
- For each course, CLOs satisfaction survey is done. The instructor distributes the survey form to the students at the end of each semester before the final examination. The survey conducted to measure the CLOs attainment for students by their self.
- For each course, CLOs are mapped with the SOs. If 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.



The Assessment Plan.

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.

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

Authorized Signatures

Dean/Chair	Name	Title	Signature	Date
Program Dean or Program Chair Main Campus	Dr. Abdullah Alwadie	Associate Professor		