



College of Engineering
Electrical Engineering Department
(EE)

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Praise be to Allah who taught us with the pen and taught the man what he didn't know, and peace and blessings of Allah be upon the most honorable among His prophets and messengers, our Prophet Muhammad, Prayers and Peace be upon him, his family, and companions : The College of Engineering is keen to ensure that its outputs are in line with the vision of the Kingdom of Saudi Arabia 2030 to constitute a basic pillar of the labor market in engineering disciplines and to be distinguished in the field of scientific research and community service for the benefit of the region and the nation. Currently, the College has three effective academic programs: electric, mechanical and civil engineering, with a variety of specialized tracks. We seek an academic accreditation from the local NCAAA and the International ABET organizations for each of these programs in different tracks, in addition to our serious desire to expand in specialization which is in line with the national vision of the Kingdom as the college covers a wide geographical range that includes many of the provinces and populated centers and because it has educational facilities equipped with the latest technology and the presence of a distinguished calibers of faculty members May All Allah bestow His Blessings and Mercy upon you

Dr. Ali Al-Otaibi
Vice Dean for Educational Affairs,
College of Engineering, Dawadmi-11911
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The main objectives of the Deanship of Academic Affairs include: Supervising the systems and procedures within the departments in order to ensure the progress of the educational process, developing the study plans to suit the variables of the labor market and its needs, and providing the appropriate environment for academic and research work within the college. In addition, the College of Engineering is pursuing a core goal through its academic programs by working with the College's Deanship for Quality to get the academic accreditation from the Accreditation Board for Engineering and Technology (ABET) and the National Commission for Academic Accreditation and Assessment (NCAAA). Our mission in the Agency is to improve the educational process through the development of academic programs with high quality, and to assess the educational process periodically. We are always striving to push the educational process upward, embrace all scientific innovations, and support innovative educational solutions.

Assoc. Prof. Dr. Mohamed Talaat
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No one can imagine living today without electricity. It dominates all our daily activities starting from very simple to very complicated ones. The need for electrical engineers appears clearly in the field of electrical energy generation and transmission. The participation of electrical engineers can also be seen in the manufacturing of TV's, radios, stationary and mobile telephones, computers, electric ovens, refrigerators, cars, and so on. Indeed, it is very rare today to see a device or a piece of equipment that is not entirely or at least partially designed by electrical engineers. In the Kingdom of Saudi Arabia, electrical engineering professionals are among the most eagerly sought in both industry and services. Some of the companies offering career opportunities to electrical engineers as well as many other private companies and governmental agencies.

Brief on the EE Program

The College of Engineering was established in 1429 Hijri -2008 AD, and in turn it emphasizes the provision of the best means of education and research that serve the community and become an effective partner in the industry. The Electrical Engineering program was implemented since the establishment of the college. Since then, five batches of students have graduated from the program during the academic years (1436/1437 – 1437/1438 – 1438/1439 – 1439/1440 – 1440/1441 – 1441/1442 Hijri), given that admission to new students is only given at the first semester of the academic year. In terms of education, the program provides a broad knowledge in the field of different electrical branches such as electrical power and communication sectors. The College and the Electrical Engineering department aim to establish a close relationship between professors and students and provide a university atmosphere that helps creativity, performance, acquisition of advanced knowledge, and practical skills in many important engineering fields. Through the program with a team of highly experienced instructors (i.e., associate professors, assistant professors, and lecturers) and qualified students, the college seeks to play an active role in the community and serve the national vision of Saudi Arabia (Vision 2030) as we believe that the graduates of the electrical engineering field will play a leading role in many aspects of the vision. Furthermore, the program graduates are expected to acquire the knowledge and skills that enable them to effectively perform in the technical fields of electrical engineering whether in governmental organizations or private companies.

Vision

“Leadership in the field of electrical engineering and contributing to the spread of knowledge and community service”.

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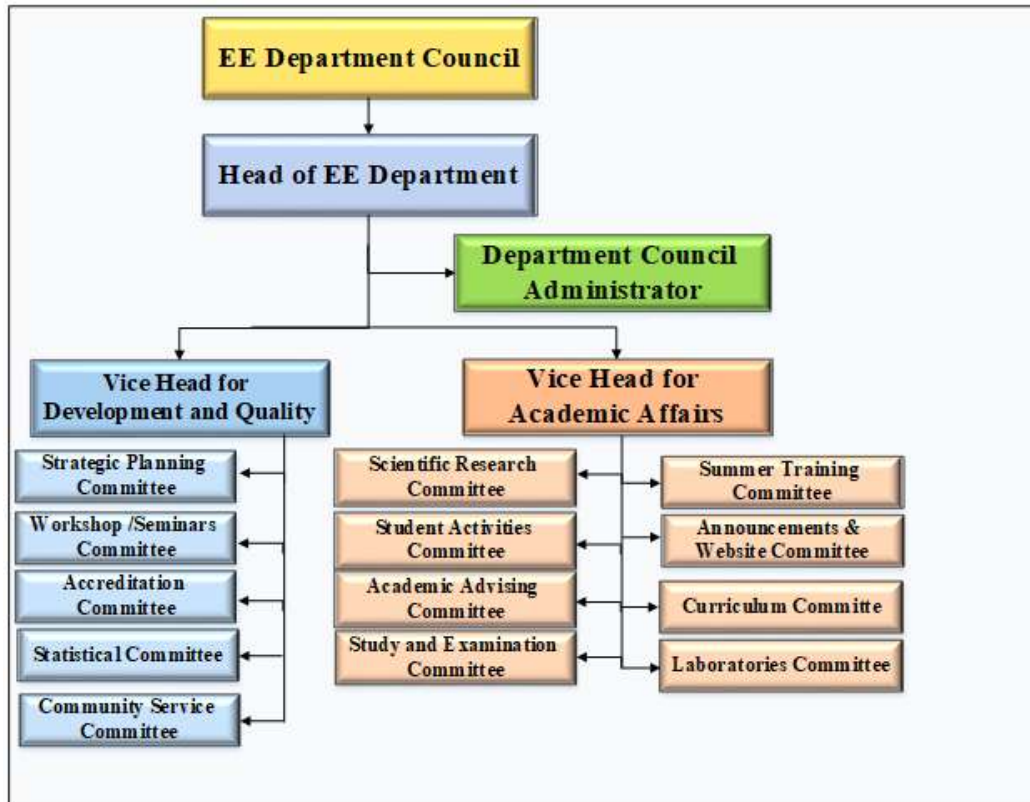
Mission

“Providing distinguished education and scientific research to keep pace with developments in the field of electrical engineering to prepare competitive engineering cadres capable of solving industry and community problems”.

Strategic goals

	Strategic goals of EE Program
1	Developing the electrical engineering program by advancing the quality and efficiency of teaching and learning to meet the needs of the labor market.
2	Continuous development of the research and teaching skills of faculty members in the electrical engineering program.
3	Graduate distinguished students equipped with scientific theories, practical and interactive skills, and creative and competitive capabilities in the field of electrical engineering.
4	Serving and developing the local community, as well as linking research topics with community issues.
5	Spreading the culture of quality in the EE program, and receiving national and international accreditation.

Organizational Chart



Program Educational Objectives (PEOs)

The EE Department has defined four Program Educational Objectives (PEOs) for the bachelor program in 2017/2018. It is targeted that these objectives meet job market expectations for five to seven years after graduation. Through the following EE Educational Objectives (PEOs), the graduates of the EE Program:

- PEO1:** Will have the required knowledge in areas of basic science, and fundamental concepts of engineering for career advancement or/and post-graduate degree.
- PEO2:** Will have the essential technical skills in analyzing, designing, and solving problems by utilization of various numerical, experimental and computer skills in the field of electrical engineering.
- PEO3:** Will effectively communicate and work in teams that are required for leadership positions and successful participation in multi-disciplinary teams.
- PEO4:** Will be interested in lifelong learning skills and awareness of professional engineering ethics that compatible with environmental factors and community ethics.

Student Outcomes (SOs)

The Electrical Engineering Program has approved and announced the SOs that support the Program Educational Objectives (PEOs). The attainment of these outcomes prepares graduates to enter the professional practice of engineering. Our program adopted the NCAAA and ABET outcomes as the program student's outcomes.

**The EE program must demonstrate that graduates should satisfy the following:
For NCAAA**

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Learning Domains	EE Program Learning Outcomes	ABET SOs
1- Knowledge and Understanding	K1. Comprehensive knowledge of language, mathematics, and science necessary for advanced understanding of the theories, principles, concepts, axioms and terminology related to the electrical engineering.	SO1

	<p>K2. Knowledge necessary for specialized understanding and for doing research related to recent developments in the electrical engineering specialization.</p>	<p>S07</p>
<p>2- Skills. The student will be able to:</p>	<p>S1. Apply complex knowledge, advanced skills and creativity to design a system, component, or process to meet desired needs.</p>	<p>S02</p>
	<p>S2. Practice experimental investigation related to the electrical engineering topics and theories using necessary tools, machines, materials, devices and software.</p>	<p>S06</p>
	<p>S3. Apply the underlying concepts, principles and theories to solve engineering problems.</p>	<p>S01</p>
	<p>S4. Communicate effectively with a range of audience in various ways to demonstrate an understanding of theoretical knowledge, imparting knowledge, specialized skills and complex ideas.</p>	<p>S03</p>

	S5. Apply mathematical operations, and use advanced techniques and tools for both solving complex electrical engineering problems, and supporting specialized research and projects.	SO1
3- Values. The student will be able to:	V1. Function effectively on a team, either as a cooperated member, or as a flexible and effective leader who creates a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	SO5
	V2. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	SO4
	V3. Use engineering judgement to take logical decisions in work or learning contexts supported by evidences based on analyzing and interpreting information.	SO6

For ABET

- SO1:** An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- SO2:** An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- SO3:** An ability to communicate effectively with a range of audiences.
- SO4:** An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- SO5:** An ability to function effectively on a team, whose members together provide leadership, creates a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

SO6: An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

SO7: An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Admission and Registration Rules

I. Student Admissions

II. Transfer Students

III. Transfer Courses

IV. Visiting Student

V. Attendance and Apology for the Study

VI. Withdrawal from University

VII. Graduation Requirements

I. Student Admissions

1- Admission of Fresh men

The general requirements for admission to Shaqra University can be listed as below;

- The new student should be a holder of a secondary school certificate or its equivalent from within the Saudi Arabia or from outside it.
- He should not have obtained a high school or equivalent for more than five years. While, the university council may exempt from this condition if there are convincing reasons.
- He should have a good behavior registry.
- He should successfully pass any personal interview or test that the University Council requires.
- He should be medically fit.
- He should obtain his approval for study if he works in any governmental or private organization.
- He should meet any other conditions determined by the University Council at the time of submission.

According to the admission of freshmen, the University Council determines on the proposal of the College Council the number of students who can be admitted in the next academic year. If there are excess in the applicant's number, the selection is done according to their grades in the general

secondary certificate, personal interview and admission tests (if found). In addition, the result of the general capabilities test, which is prerequisite for all applicants, is considered.

The ratio of each applicant is calculated as follows: 40% of the general cumulative average for the secondary year, 30% for the general capabilities test and 30% for the acquisition test score.

It is worth mentioning that the specialization in the College of Engineering, Shaqra University requires that the student passes successfully all the courses of the curriculum for the full preparatory year with rate to be at least (4).

2- Admission of International Students

The admission process for international students is somewhat as same as national ones with addition of the following:

- To pass the requirement scores of both capabilities and acquisition tests.
- The equivalent cumulative ratio (40% secondary - 30% capabilities - 30% acquisition) should be a total higher than 85 degrees.
- Not to exceed 25 years of age.
- The student must be a regular resident in the Saudi Arabia.

II. Transfer Students

1- Transfer from Other Universities

The student may, upon the approval of the head of the department and the dean of the college in Shaqra University, accept his transfer from outside the university according to the following rules:

- The student has studied at a recognized college or university.
- The student should not be separated from the University for Disciplinary Reasons.
- The student has spent at least two semesters at the university from which he wishes to transfer, provided that the number of study credit hours recorded in his academic record is not less than (24) hours.
- The student has at least the cumulative rate of conversion at (3.75) of (5.0).
- The student should study at Shaqra University at least 60% of the graduation requirements.
- The student must apply for transfer before the beginning of the semester at least five weeks.

2- Transfer from College to Other within the University

After the approval of the head of the department and the dean of the college in Shaqra University, accept his transfer from according to the following rules:

- The student must have spent at least one semester in the college that he wants to transfer from with at least (14) credit hours.
- The student should not be interrupted, delayed or apologized for the study from the college

from which he wishes to transfer.

- His cumulative average should not be less than the limit determined by the College Council and should not be less than (2 of 5).
- Transfers between university faculties are permitted only twice during the entire period of university study.

3- Transfer from One Specialization to Another within the College

After the approval of the Dean of the College, the student may transfer from one specialization to another within the College according to the following rules:

- Completion of entry requirements for the specialization to be transferred to.
- Not violating the capacity of the department.
- The student has spent at least one semester in the specialization in which he wishes to transfer with 14 credit hours.
- The student should not be interrupted, delayed or apologized for the study from the specialization in which he wishes to transfer.

III. Transfer Courses

The College Council should compare the courses studied by the student outside the university on the recommendation of the departments that provide these courses. The student's academic record should be confirmed in the student's academic records, and should not be included in the calculation of his cumulative average according to the following rules:

- The student has studied at a recognized college or university.
- The number of hours studied by the student in the course he wants to equal should be equal to or more than the number of hours spent at Shaqra University. This rule may be to consider exceptions by a maximum of one hour.
- The content of the material studied by the student must be identical to the content of the material in the Shaqra University by not less than (70%).

IV. Visiting Student

Additionally, the transfer courses can be done for the visiting students. The visiting student is defined as the student who is studying some courses in another university or in a branch of the university to which he belongs without transferring him. His credit hours can be calculated according to the following rules;

- The acceptance of the department, the faculty and the grant acceptance and registration to allow the student to study as a visiting student.
- To be studied at a recognized college or university.
- The course topics being taught by the student outside the college are equivalent to the course topics in his college by 70% or more.
- The maximum number of academic credit hours outside the university is 25% of the total number of credit hours required to graduate from Shaqra University.
- The number of credit hours for the course which the student has studied outside the university should be equal to or more than the number of credit hours in Shaqra University.

V. Attendance and Apology for the Study

1- Attendance Rules

- The regular student must attend lectures and practical lessons. He is prohibited from entering the final exam if his attendance is less than the percentage determined by the university council, but not less than (75%) of the lectures and practical lessons specified for each course during the semester.
-
- A student who has been prohibited from entering the final exam, is considered to be failing in the course and his final degree will be denied (DN)
- The College Council or its authorized representative may exclude the prohibition and allow the student to enter the test. But the student must present an excuse accepted by the Council. The University Council shall determine the attendance rate, not less than (50%) of the lectures and practical courses specified for the course.
- The student who misses the final test is zero in that test. His final result is calculated from his quarterly work degrees.

2- Apology Rules

- A student may withdraw with the excuse of one or more courses during the semester with the following rules;
- The number of remaining credit hours shall not be less than 12 hours. If he presents an acceptable excuse to the Dean of the College at least three weeks before the start
- of the final tests.
- A student may apologize for continuing to study a semester without being considered a failing student if he presents an acceptable excuse to the body determined by the university council. His final grade will be (W). The apology semesters must not exceed two consecutive semesters or three non-consecutive semesters.

VI. Withdrawal from University

The student may withdraw from the university after completion of the procedures of removing the university from the university and return the university card and bring his identity papers to return the original file. The withdrawal from the university shall entail the following:

- The period during which the student withdraws from the university shall be calculated as if he were not studying.
- The rewards of the withdrawn student shall be suspended from the semester until he registers for another semester.
- The student must be evacuated from the residence, the library and other university facilities.
- The student is considered to be withdrawn from the university and he has the right to re-enroll if he required in a period not exceeding four semesters or two academic years.
- The student may apply for postponement of the study for an excuse acceptable to the body determined by the University Council, provided that the postponement does not exceed two consecutive or three semesters.

VII. Graduation Requirements

The Admission and Registration Deanship Office of the University is responsible for ensuring that graduating students have met all graduation requirements which can be classified as below:

1- First Year

The preparatory year aims at enhancing the skills of the student through intense English courses and courses that improve their communication and computer skills. The preparatory year is 31 credit hours.

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2- Course Requirements

After successfully passing the preparatory year (31 credit hours) and to complete the graduation requirements for a B.S. in Electrical Engineering, the students are required to successfully pass a total of 138 credit hours

3- Senior Design Project Requirements

According to the senior design project requirements, the design project is divided into two parts (2 credit hours each). The student is eligible to register for Senior Design Project (1) if he completes successfully at least 126 credit hours excluding preparatory year. Senior Design Project (2) can be

taken during the first and second semesters only (not during summer semester).

4- Summer Training Requirements

Prior to graduation, after completion of at least 100 credit hours, each Electrical Engineering major must complete an approved Engineering Summer Training Program. Summer training extends over a period of 10 weeks excluding weekends and official holidays, and must be undertaken in companies or establishments accepted by the college. The student's performance is evaluated by the training company and by both

Committees and units

No.	Committee	Chairman	Members
1	Study and examination	Dr. Waleed Hilmy	1- Dr. Nazmi 2- Dr. El-adawy
2	Academic Advising	Dr. Waleed Hilmy	1- Dr. Talaat 2- Dr. Eladawy 3- Dr. Haweel
3	Laboratories	Dr. Ahmed Hatata	1- Dr. Khaled Saleh 2- Dr. Nazmi 3- Dr. Waleed
4	Curriculum	Dr. Nazmi Azzam	1- Dr. Talaat 2- Dr. Hatata 3- Dr. Waleed
5	Strategic Planning	Dr. Ahmed Hatata	1- Dr. Khaled Saleh 2- Dr. Lafi Alnufaie 3- Dr. Nazmi
6	Statistical	Dr. Nasser Mourad	1- Dr. Hatata 2- Dr. Haweel
7	Accreditation	Dr. Nasser Mourad	1-Dr. Khaled 2-Dr. Lafi 3-Dr. Nazmi, 4-Dr. Eladawy 5-Dr. Hatata 6-Dr. Waleed

			7-Dr. Morsy 8-Dr. Alghassab 9-Dr. Haweel
8	Scientific Research	Dr. Eladawy & Dr. Moh. Haweel	1- Dr. Nasser 2- Dr. Waleed
9	Student Activities	Dr. Morsy Ismail	1- Dr. Nasser 2- Dr. Hatata
10	Workshop /Seminars	Dr. Eladawy	1- Dr. Morsy
11	Co-operative Training	Dr. Haweel	1- Dr. Morsy 2- Dr. Alghassab
12	Announcements	Dr. Haweel	1- Dr. Nasser 2- Dr. Morsy
13	Community service	Dr. Morsy Ismail	1- Dr. Eladawy 2- Dr. Lafi

Staff Members

The Electrical Engineering (EE) program recruits faculty members with MSc/Ph.D. degrees from highly reputable international universities with experiences in teaching from different countries. The department has seventeen faculty members; eight Associate Professor, six Assistant Professors and three instructors.

1- Assis. Prof. Khaled Saleh (college Dean of Students' Affairs)

Degree	Discipline	Institution	Year
Ph.D.	Electrical Engineering / Control systems	Arizona State University (Tempe), Ira A. Fulton Schools of Engineering	2017
M.Sc.	Electrical Engineering	University of Colorado at Denver	2010
B.Sc.	Electrical Engineering	King Saud University	2006

2- Assis. Prof. Ali Al-Otaibi (college Vice Dean of Students' Affairs)

Degree	Discipline	Institution	Year
Ph.D.	Civil Engineering	Loughbrough University, UK	2019
M.Sc.	Civil Engineering	Griffith University, Australia	2013
B.Sc.	Civil Engineering	University of Southern Queensland, Australia	20012

3- Assoc. Prof. Mohamed Talaat Mohamed Moustafa (Head of Department)

Degree	Discipline	Institution	Year
Ph. D.	Electrical power and machines	Zagazig University	2009
M. Sc.	Electrical power and machines	Zagazig University	2005
B. Sc.	Electrical power and machines	Zagazig University	2000

4- Assoc. Prof. Lafi Al Nufaie

Degree	Discipline	Institution	Year
Ph. D.	Electrical power and machines	University de Reims-France	2012
M. Sc.	Electrical power and machines	University de Reims-France	2009
B. Sc.	Electrical power and machines	University de Reims-France	2006

5- Assoc. Prof. Nasser Mourad Abdelmawgoud Elsaied

Degree	Discipline	Institution	Year
PH. D.	Signal processing	Mcmaster University (CANADA)	2009
M. SC.	Communications and electronics	Assuit University (EGYPT)	2002
B. SC.	Communications and electronics	Assuit University (EGYPT)	1997

6- Assoc. Prof. Nazmi Azzam Mohammed

Degree	Discipline	Institution	Year
PH. D.	Electrical engineering	Alexandria uni.	2010
M. SC.	Electronics and communication	AASTMT	2004
B. SC.	Electronics and communication	AASTMT	2002

7- Assoc. Prof. Mohamed Eladawy Khalil Eladawy

Degree	Discipline	Institution	Year
PH. D.	Electrical power and machines	Poitiers university	2011
M. SC.	Electrical power and machines	Mansoura university	2003
B. SC.	Electrical power and machines	Mansoura university	1997

8- Assoc. Prof. Ahmed Youssef Hatata

Degree	Discipline	Institution	Year
Ph.D.	Electrical Power and Machines	Mansoura University	2012
M.Sc.	Electrical Power and Machines	Mansoura University	2007
B.Sc.	Electrical Power and Machines	Mansoura University	2002

9- Assoc. Prof. Waleed Saad Fouad Helmy

Degree	Discipline	Institution	Year
Ph.D.	Electronics and electrical communications	Menofia university	2013
M.Sc.	Electronics and electrical communications	Menofia university	2008
B.Sc.	Electronics and electrical communications	Menofia university	2004

10- Assoc. Prof. Morsy Ahmed Morsy Ismail

Degree	Discipline	Institution	Year
Ph. D	Electronics and Communications	Ain Shams University	2013
M. Sc.	Electronics and Communications	Ain Shams University	2007
B. Sc.	Electronics and Communications	Ain Shams University	2000

11- Assis. Prof. Mohammad Tarek Ibrahim Haweel

Degree	Discipline	Institution	Year
Ph. D	Communications and Electronics	Menofia university	2021
M.Sc.	Communications and Electronics	AASTMT	2014
B.Sc.	Electrical and Communication Eng.	Shorouk Academy	2010

12- Eng. Mohammed Al Rifai

Degree	Discipline	Institution	Year
M.Sc.	Electrical Engineering	The University of Nottingham	2017
B.Sc.	Electric Power Engineering	Taif University	2012

Engineering Club, Electrical Engineering Department

Under the patronage of His Excellency the Dean of the College of Engineering in Dawadmi, the Engineering Club was established in 1440 Hijri. . The club is also a link between the external environment and university students.

Goals of the club:

1. Adopting the students' innovations and inventions and helping them to accomplish them.
- 2 - Holding periodic workshops to develop students' abilities to innovate.
- 3- Qualifying outstanding students to participate in local and international competitions.

Community Service and Environment Development Sector

Community service and environmental development is one of the main objectives of the Faculty of Engineering and then the Department of Electrical Engineering, and therefore the department seeks to communicate continuously with all community organizations (factories - companies - education - civil society organizations) to affect them and affected and to be the Faculty of scientific leadership, research and scientific reference for these bodies, And that these bodies have the conviction of the importance of the college and its effective role in the service of society and the development of the environment.

Activities of the Department in Community Service:

Believing in the importance of the role of the Department in spreading cultural awareness based on sound scientific foundations among the members of the community, the Department has carried out educational activities carried out by selected members of the faculty and the participation of students, where the various activities offered in various places, including but not limited to:

1 - A training course on scientific methods that enhance the provision of electrical energy, and alleviate the economic burdens of the community and the most important objectives of the course is to introduce students to the methods of energy conservation and reduce consumption rates.

2 - A course in writing engineering reports in English for the engineers of the water plant and electricity company in Dawadmi.

3- Agreement between the Faculty of Engineering (Department of Electrical Engineering) and Al-Fanar Company for Electrical Safety Devices to hold several courses with the aim of linking the scientific content with scientific applications and

the labor market in order to increase students' knowledge and achieve the Kingdom's Vision 2030 towards clean and safe energy. These courses started with the most important course (electrical safety):

- Training and qualification of students on the electrical safety program.
 - Introduce students to electrical safety procedures in accordance with international standards.
 - Knowledge of international code.
 - Avoid the risks of electricity
 - Recognition of electrical terms and knowledge of their meaning.
- Knowledge of electrical safety devices.

Laboratories

The laboratories serve the needs of the courses offered by the power and communication tracks. They are:

- 1- Power electronics lab
- 2- Adjustable speed drivers lab
- 3- Power systems lab
- 4- Electromechanical energy conversion lab
- 5- Logic design & Electronic circuits lab
- 6- Microprocessor & Electrical circuits lab
- 7- Automatic control lab & Measurements lab
- 8- Antenna, Radio frequency (RF) & microwave engineering lab
- 9- Advanced communications & Digital communications lab
- 10- Digital signal processing lab

Antenna, Radio frequency (RF) & microwave engineering lab



Automatic control lab & Measurements lab

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Power electronics lab



Adjustable speed driver's lab

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Electromechanical energy conversion lab



Logic design & Electronic circuits lab



Automatic control & Measurements lab



Microprocessor lab



Electrical circuits lab



Electronics (2) Lab



Advanced communications & Digital signal processing lab

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Digital communications lab

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