



King Saud University College of Engineering

Electrical Engineering Department

Program Bulletin



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A MESSAGE FROM CHAIRMAN



I have the honor of directing the Electrical Engineering department, together with our top notch faculty and staff. It is a pleasure to help and inspire the new generation enthusiastic students. It gives me immense pleasure to welcome you to the website of the Department of Electrical Engineering (EE), King Saud University. With more than four decades of continuous advancement in education, and with the expertise of more than 47 full-time faculty members and 45 technical and supporting staff members, the department offers prominent programs which are highly reputed. Being one of the largest departments in the college of engineering, the department attracts more than 500 of the best undergraduate students in the Kingdom, and more than fourscore graduate (MS & PhD) with high caliber students. A group of international students joins all programs of the department.

Graduates of the undergraduate program gets a degree with major in Electrical Engineering (EE). The program offers elective courses that allow students to get depth experience in one specialization area in electrical engineering, in addition to breadth knowledge in other areas. The four major areas include: Electronics, Communication Systems, Electrical Power Engineering, and Automation and Intelligent Systems. The program equip the students with all required basic courses, in addition to advanced topics that cover emerging technologies such as VLSI design, nanoelectronics, electronic warfare, wireless communications, optical communication, satellite communication, renewable energy, smart grids, artificial intelligence, computer networks, and real-time systems. The diverse areas of specialty provide the graduates with very good job opportunities both in the governmental as well as in the private sectors throughout the Kingdom. The student experience is culminated by working as a team on a senior design project for a full academic year.

Graduate students conduct active research in various aspects of electrical engineering, under supervision of the faculty members. An MS student can choose a research topic of his thesis in one of advanced fields of electrical engineering. MS students can also choose to have a non-thesis option program, in which they take two research courses as part of their curriculum. The department also offers a prominent PhD program that is designed to provide education and research ability to graduates who are competent in basic knowledge and research experience. PhD candidates have to pass a set of

written and oral qualifying exams in basic and advanced topics of electrical engineering. After passing these exams, a PhD candidate conduct a research that leads to innovative contribution to the field of electrical engineering, using the state-of-the-art facilities in the department.

The Electrical Engineering Department is continuously updating the curricula of all programs to keep pace with the national and international norms. In this regard, the Department is continuously upgrading education, research laboratories, and class-rooms in order to keep pace with the latest technology advancements.

The department has maintained close working relation with public and private sector industries including government agencies, telecommunication companies, power generation and production companies, electronics companies, and automation & control companies. Students are provided various scientific trips to these companies through the electrical engineering club. Undergraduate students also choose one company to have two-month practical training as part of the curriculum. The department also provides many services to the society. Faculty members participate in consulting work related to technical aspects of electrical engineering, in addition to educating the public through newspaper and magazine articles about new technologies and possible dangers associated with their mal use. Faculty members also provide short courses to enhance the skills of engineers and technicians in government and industrial partners.

I hope that this message would attract prospective students to join our prestigious program. For current students, you should be proud that you will be an engineer with KSU degree in EE, and you should make all possible efforts to enhance the experience you gain from the program. You will be a live demonstration of the professional engineer model that you learn here, when you develop innovative solutions to engineering problems, abide to ethics, preserve the environment and become an influential engineer in your workplace. The EE program will then be proud to provide the society with successful alumni like you.

The Bachelor of Science Program in Electrical Engineering is Accredited by the Engineering Accreditation Commission (EAC) of ABET, <https://www.abet.org/>

Dr. Ahmed Almaiman

Chairman of Electrical Engineering Department

TABLE OF CONTENTS

<i>A Message from Chairman</i>	1
<i>Table of Contents</i>	3
INTRODUCTION	5
VISION AND MISSION	6
Vision	6
Mission	6
Values	6
EDUCATIONAL PROGRAMS	7
<i>Bachelor of Science Program</i>	7
Program Mission	7
Program Educational Objectives	8
Student Outcomes	8
Program Enrollment	9
The Academic Plan	9
Course Requirements	9
Design Groups and Integrated Education	10
<i>Master of Science Program</i>	24
Program Mission	24
Program Goals	24
Aims of the Master Program:	24
MS Program Learning Outcomes:	24
Requirements for MSc (Thesis Option) Degree Program:	25
Electronics	26
Communications	27
Electrical Machines and Power Electronics	28
Electrical Power	29
Control Systems and Computers	30
Degree Requirements for M. Sc. (Non-Thesis Option) Program	31
<i>PhD Program in Electrical Engineering</i>	36
Program Mission	36
Program Goals	36
PhD Program Learning Outcomes:	37
Degree Requirements	37
Electronics	38
Communications	38
Electrical Machines and Power Electronics	38
Electrical Power	38
Control Systems and Computers	39
FACULTY	40

Advisory Board	46
Mission	46
Organization	46
Objectives	46
History	46
Current EEAB Members	46
LABORATORIES	49
RESEARCH UNITS	50
DEPARTMENT COMMITTEES	50
Accreditation and Quality Committee	50
Alumni Committee	52
Community Relations Committee	53
Laboratory and Risk Management Committee	53
Statistics and Information Committee	55
Graduate Study Committee	55
Committee of class-schedules, registration and examinations	56
Research Committee	56
Teaching Assistants and Scholarship Committee	57
Continuous Education Committee	57
Academic Advising and Student Guidance Committee	58
Practical Training Committee	59
Student Rights Committee	61
Student Activity Committee	61
Academic Plans Committee	61
Class Schedule, Registration and Exam Committee	62
Qualifying Exam Committee	63
Graduation Projects and Design Groups Committee	64
Promotions and Recruiting Committee	65
Purchases Committee	66
ADMISSION REQUIREMENTS & REGULATIONS	67
Admission of Students	67
Student and Course Transfer	67
Students Allocation to College Departments	68
Practical Training	69
APPENDIX – A: Laboratories	70
APPENDIX – B: Software resources	79

INTRODUCTION

The Electrical Engineering Department has been in the forefront of the educational development process at King Saud University up to this year as it celebrates its 50th anniversary. Since its establishment, the Electrical Engineering Department has effectively contributed to the rapid development of the educational system in the Kingdom by striving to offer graduates who are qualified to play a vital role in all development plans of the country and hold key positions in all governmental and private sectors. As is understood by its faculty and staff members, the main objective of the Electrical Engineering Department is to educate highly specialized and qualified electrical engineers in different fields of electrical engineering who are capable of enhancing the rapid industrial, economic and social development that takes place in Saudi Arabia.

Accordingly, the Electrical Engineering Program prepares engineers to work in electrical power engineering stations, substations and high voltage transmission networks. The program also teaches students the issues pertaining to the design, development, and analysis of different types of electrical generators and motors in addition to their operation, maintenance, and control through extensive knowledge of power electronics. In addition, the program qualifies engineers to be capable of designing, developing, operating, and maintaining networks including antenna systems, satellite, microwave, and digital communications, in addition to signal processing. On the other hand, the program also prepares engineers to design, manufacture, and maintain the electronic systems used various civilian or military fields. Moreover, the Department prepares system engineers to design and manage automation, artificial intelligence and control systems of various industrial processes.

The Electrical Engineering Department is continuously updating the curricula of undergraduate and graduate programs to keep pace with the national and international norms. In this regard, the Department is fully equipped with advanced facilities and high-quality laboratories that cover all aspects of electrical engineering. These facilities are subject to continuous upgrades and improvements in order to keep pace with the latest technology requirements. Graduates of Electrical Engineering Program are thus equipped with experience to excel in notable job opportunities in various specialties related to electrical engineering. The Electrical Engineering Program is also accredited on both national level by “*Education Evaluation Commission-National Center for Academic Accreditation*” and internationally by “*the Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org>*”

VISION AND MISSION

رؤية قسم الهندسة الكهربائية:

أن يقدم برامج مرموقة عالمياً تتبنى بيئة تعليمية متميزة وإسهامات ملموسة في البحث العلمي وبصمات على المجتمع عبر تعزيز مهنة الهندسة الكهربائية.

رسالة القسم:

أن توفر تعليماً متميزاً وشاملاً يجعلنا من البرامج المرموقة في الهندسة الكهربائية. سوف نحافظ على بيئة تعليمية تسلح الخريجين بأحدث الخبرات وتحفزهم على مواصلة النجاح المهني وتخدم مجتمعنا بحلول هندسية مبتكرة.

Vision

To provide world-class programs with distinguished educational environment, tangible contributions in innovative research and positive impact on the society by fostering the profession of electrical engineering.

Mission

To provide an outstanding and comprehensive education that makes us among the best electrical engineering programs. We shall maintain distinctive environment to equip our graduates with cutting-edge experience, motivate them to achieve successful career, and serve our society with innovative engineering solutions.

Values

The Department of Electrical Engineering operates according to the spirit of the following four values:

1. To manage with quality and efficiency and to emphasize cooperation, ethical values, and trust.
2. To treat individuals with dignity and respect and to value diversity.
3. To support distinction and to encourage creativity.
4. To focus on the well-being of the society and to protect humanity.

EDUCATIONAL PROGRAMS

The department offers a carefully designed undergraduate program with a Major in Electrical Engineering (EE).

The Department also offers Master of Science programs (Non-thesis and thesis options) in the following areas of specialization:

- 1-Electronics
- 2-Communications
- 3-Electrical Power
- 4-Control Systems and Computers

PhD programs in the following specializations are also offered by the Department:

1. Electronics.
2. Electromagnetic Waves and Communication.
3. Electrical Machines and Power Electronics.
4. Electrical Power and High Voltage Systems.

Degrees awarded by the department

- Bachelor of Science in Electrical Engineering.
- Master of Science in Electrical Engineering (Non-thesis and thesis options).
- PhD in Electrical Engineering

BACHELOR OF SCIENCE PROGRAM

Program Mission

To provide an outstanding and comprehensive education that makes us among the best electrical engineering programs. We shall maintain distinctive environment to equip our students with cutting-edge experience and serve our society with innovative engineering solutions. We shall also invoke the desire and ability of life-long learning in our graduates for pursuing successful career in engineering and postgraduate studies.

Program Educational Objectives

Within few years of their graduation, graduates of the electrical engineering would accomplish the following PEOs. Our graduates would:

PEO 1: Apply their experience and knowledge to **lead** a successful engineering career and **demonstrate** leadership in advancing their workplace.

PEO 2: **Demonstrate** commitment to professional & ethical responsibilities, and **exercise** informed judgments considering the impact of engineering solutions in global, economic, environmental, and societal contexts.

PEO 3: **Exhibit** proficiency in producing innovative solutions that **serve** the requirements of our society, employing the teamwork experience they gain in our laboratories and the practical skills they acquire in the field.

PEO 4: **Succeed in pursuing** self-learning, and **advancing** their career and post-graduate studies.

Student Outcomes

[1]	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
[2]	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.
[3]	An ability to communicate effectively with a range of audiences.
[4]	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.
[5]	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
[6]	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
[7]	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Program Enrollment

The following table shows summary of EE BS program students who are in the second, third, fourth and fifth plan years, corresponding to levels 3-4, 5-6, 7-8, and 9-10, respectively.

Academic Year	Student Level					Total Undergrad	Total Graduates
	1-2	3-4	5-6	7-8	9-10		
2020-2021		12	95	120	136	363	106
2019-2020		4	109	141	173	427	143
2018-2019		15	134	152	153	454	100
2017-2018		8	140	148	132	428	99

The Academic Plan

Graduates of the Electrical Engineering program earn Bachelor of Science in Electrical Engineering Degree. The curriculum is covered in five-years (ten- semesters).

Course Requirements

As described in Table 1, students need to successfully pass 165 credit hours with minimum GPA of (2.75 of 5) to complete graduation requirements. This includes the following

- 32 credit hours of first common year (Table 2)
- 8 credit hours of University requirements (Table 3), which includes:
 - Compulsory course (2 credit hours) (Table 3A)
 - Elective courses: student chooses 3 courses (6 credit hours) (Table 3B).

- 48 credit hours of College requirements (Table 4) of which:
 - 40 credit hours are common courses for all programs (Table 4A)
 - 6 credit hours of additional courses for Electrical Engineering Program (Table 4B)
 - 2 credit hours of free elective courses to be taken by student from any college but not from his department (Table 4C).
- 77 credit hours of departmental requirements (Table 5) of which:
 - 42 credit hours are core courses (Table 5A).
 - 4 credit hours of capstone design projects (Table 5B).
 - 30 credit hours of elective courses (Table 5C).
 - One credit hour of practical training with no-grade (Table 5D).
- The 30 credit hour elective courses are divided into the following groups:
 - Elective Laboratory Courses (3 cr. hr.): (Table 5E)
 - Electrical Engineering Elective Courses (27 cr. hr.): (Table 5F)
 - Students are allowed to register for an optional course on principles of scientific research (Table 5G)

Design Groups and Integrated Education

The current plan of EE program adopts an *integrated approach* in which the student is engaged in a team that works on a specific area in electrical engineering. The areas represent modern application in the field of electrical engineering, and the team should work to provide solutions to these challenges associated with this application. The experience attained by the student during his study prepares him to excel in working within professional engineering teams after graduation.

The academic plan is prepared to be highly flexible with 38 elective credit hours to allow students to get full benefits of this this problem-solution-oriented education. Various components of the academic plan are thus integrated to

enhance student's knowledge and skills to succeed in working within his design group, including:

- Elective labs to be chosen by student.
- Elective courses to be chosen by student.
- Summer training.
- Academic trips to industrial sites.
- Graduation project.
- Cooperation with industrial partners in the graduation project

General Guidelines for forming design groups are as follows:

- Students at EE department chooses a depth area from one of various specialization areas that are entitled *design groups*. The specialization areas cross the boundary of conventional specialties that exist in the department.
- A design group includes a number of students supervised by faculty members, who are specialized in the area of this group.
- In addition, each design group has typically one or more teaching assistant to help students in the group on programming issues.
- One faculty member in the group serves as an academic advisor of the students in the group.
- Students who are expected to finish the 7th level within the current semester are entitled to join design groups.
- Design group committee will announce to students information about offered groups. Students can arrange with group coordinator to get more information on each of the design groups.
- Students are encouraged to contact you and discuss about the requirements of the group. Students can also present their qualifications to you that may include:
 - Academic background and achievements
 - Computational Skills
 - Communication Skills
 - Previous Training Courses
 - Conducted class projects
- Modeling and Simulation Lab EE 302 is design to prepare students to design group. Students in EE 302 course are required to work on a

course project. Students are encouraged to choose their course project on the area of the design group they choose.

- The academic advisor of each group helps the student to choose the elective courses that equip the student with adequate depth and breadth experience. This typically include:
 - 3 credit hours of elective labs to be taken by group students
 - 18 credit hours of elective courses to be taken by group students
 - 9 credit hours of elective courses to be chosen by each student.
- The department prepares a list of courses to be offered in the next academic year. Minimum of 10 students per course should be maintained.
- The elective courses focus on design aspects and they assist the student in his capstone design projects.
- The student teams for capstone design project are arranged during the 8th level of study within each design group.
- The design group specifies the list of courses and labs required to be completed by student before registering for the design project. Failure of student to meet these requirements may lead to delaying his graduation or changing his design group.
- Students register for work on their design projects during the 9th and 10th levels.

Table 1: SUMMARY OF B.S. DEGREE REQUIREMENTS IN ELECTRICAL ENGINEERING

Requirements	Cr. Hr.	Description
Common First Year	32	General Chemistry (4) Differential Calculus (3) Statistics (3) English (12) Writing Skills (2) University Skills (3) IT Skills (3) Entrepreneurship (1) Health and Fitness (1)
University	8	Islamic Studies: Compulsory (2) Complementary (6)

College	48	Common (40) Additional (6) Free Elective Course (2)
Department	77	Core (42) Electrical Electives (30) Projects (4) Practical Training (1,NP) Research Project (0, NP)
Total	165	

Table 2: Common First Year (32 credit hours)

Level 1			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
ENGS 100	English language	6(6,9,0)	
MATH 101	Differential Calculus	3(3,1,0)	
ENT 101	Entrepreneurship	1(1,0,0)	
CHEM 101	General Chemistry	4(3,0,2)	
ARAB 100	Writing Skills	2(2,0,0)	
Total		16	

Level 2			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
ENGS 110	English	6(6,9,0)	
CUR 101	University Skills	3(3,0,0)	
CT 101	IT skills	3(0,0,6)	
STAT 101	Introduction to Statistics	3(2,2,0)	
EPH 101	Health Education & Fitness	1(1,1,0)	
Total		16	

(X,Y,L) X = Lectures; Y = Tutorials; L = Lab.

Table 3: UNIVERSITY REQUIREMENTS (TOTAL 8 CREDIT HOURS)

Table 3A: Compulsory University Requirements (2 Credit Hours)

Course Code	Course Title	Cr. Hr.	Nature
IC 107	Ethics of the Profession	2	Compulsory
Total		2	

Table 3B: Elective University Requirements

Student chooses 6 credit hours from this table

Course Code	Course Title	Cr. Hr.	Nature
IC 100	Studies in Prophet Biography	2	Elective
IC 101	Origins of Islamic Culture	2	Elective
IC 102	Family in Islam	2	Elective
IC 103	The Economic System in Islam	2	Elective
IC 104	The Political System in Islam	2	Elective
IC 105	Human Rights	2	Elective
IC 106	Medical Jurisprudence	2	Elective
IC 108	Contemporary Issues	2	Elective
IC 109	Role of Women in Development	2	Elective
Total		6	

Table 4: COLLEGE REQUIREMENTS

Table 3A COLLEGE COMPULSORY COURSES (40 CREDIT HOURS)

Course Code	Course Title	Cr. Hr. (X,Y,L)	Prerequisites
MATH 106	Integral Calculus	3 (3,2,0)	MATH 101
MATH 107	Vectors and Matrices	3 (3,2,0)	MATH 101
MATH 203	Differential & Integral Calculus	3 (3,2,0)	MATH 106; MATH 107
MATH 204	Differential Equations	3 (3,2,0)	MATH 203
PHYS 103	General Physics (1)	4 (3,0,2)	
PHYS 104	General Physics (2)	4 (3,0,2)	PHYS 103
ENGL 109	Language & Communication	2 (2,1,0)	
ENGL 110	Technical Writing	2 (2,1,0)	ENGL 109
GE 201	Statics	3 (3,1,0)	MATH 106; MATH 107
GE 104	Basics of Engineering Drawing	3 (2,0,2)	
GE 106	Introduction to Engineering Design	3 (2,1,2)	GE 104

GE 203	Engineering and Environment	2 (2,0,0)	CHEM 101; MATH 101
GE 402	Engineering Projects Management	3 (3,1,0)	
GE 403	Engineering Economy	2 (2,1,0)	
Total		40	

(X,Y,L) X = Lectures; Y = Tutorials; L = Lab.

Table 4B: COLLEGE ADDITIONAL COURSES FOR ELECTRICAL ENGINEERING PROGRAM (6 CREDIT HOURS)

Course Code	Course Title	Cr. Hr. (X,Y,L)	Prerequisites
GE 211	Computer Programming in "C++"	3(2,0,2)	
MATH 254	Numerical Methods	3(3,2,0)	MATH 107
Total		6	

(X,Y,L) X = Lectures; Y = Tutorials; L = Lab.

Table 4C: COLLEGE FREE COURSE (2 CREDIT HOURS)

Course Code	Course Title	Cr. Hr.	Prerequisites
XXX	Free Elective Course	2	
Total		2	

Table 5: ELECTRICAL ENGINEERING REQUIREMENTS

Table 5A: CORE COURSES

Course Code	Course Title	Cr. Hr. (X,Y,L)	Requisites	
			Pre-	Co-
EE 201	Fundamentals of Electric Circuits	3(3,1,0)	MATH 106	
EE 202	Electric Circuit Analysis	3(3,1,0)	EE 201 MATH 107	
EE 203	Engineering Electromagnetics (1)	3(3,1,0)	MATH 203 PHYS 104	
EE 204	Engineering Electromagnetics (2)	3(3,1,0)	EE 203	
EE 205	Electric Circuits Laboratory	1(0,0,2)		EE 202
EE 208	Logic Design	3(3,1,0)		
EE 210	Logic Design Laboratory	1(0,0,2)		EE 208
EE 301	Signals and Systems Analysis	3(3,1,0)	EE 201	

EE 302	Modeling and Simulation Laboratory	1(0,0,2)	EE 301	
EE 310	Microelectronic Devices and Circuits	3(3,1,0)	EE 201	
EE 312	Basic Electronics Laboratory	1(0,0,2)		EE 310
EE 320	Communications Principles	3(3,1,0)	EE 301	
EE 330	Electromechanical Energy Conversion (1)	3(3,1,0)	EE 202 EE 203	
EE 340	Fundamentals of Power Systems	3(3,1,0)	EE 202	
EE 351	Automatic Control	3(3,1,0)	EE 301	
EE 353	Introduction to Microprocessors	3(3,1,0)	EE 208	
EE 356	Control and Instrumentation Laboratory	1(0,0,2)		EE 351
EE 357	Microprocessor and Microcontroller Laboratory	1(0,0,2)		EE 353
Total		42		

(X,Y,L) X = Lectures; Y = Tutorials; L = Lab. NP= No grade (Pass or Fail)

Table 5B: SENIOR DESIGN PROJECTS (4 CREDIT HOURS)

Course Code	Course Title	Cr. Hr. (X,Y,L)	Prerequisites
EE 496	Graduation Project -1	2(2,0,0)	Complete successfully 129 credits hours and pass all courses in levels 1-7.
EE 497	Graduation Project -2	2(2,0,0)	EE 496
Total		4	

(X,Y,L) X = Lectures; Y = Tutorials; L = Lab.

Table 5C: ELECTIVE COURSES REQUIREMENTS

Elective Module	Cr. Hr.	Notes
Elective Laboratories	3	Table 5E
Electrical Engineering Elective Courses	27	Table 5F
Optional Elective Course	0	Table 5G
Total	30	

(NP): No grade-Pass

Table 5D: PRACTICAL TRAINING

Course Code	Course Title	Cr. Hr. (X,Y,L)	Prerequisites
EE 999	Practical Training	1 (NP)	Successful Completion of 110 credit hours
Total		1	

(X,Y,L) X = Lectures; Y = Tutorials; L = Lab.

Table 5E: ELECTIVE LABORATORIES

Student chooses 3 credit hours from the following table

Course Code	Course Title	Cr. Hr. (X,Y,L)	Requisites	
			Pre-	Co-
EE 402	Electronic Circuits Laboratory	1(0,0,2)		EE 400
EE 406	VLSI Design Laboratory	1(0,0,2)		EE405
EE 421	Communications Laboratory	2(0,0,4)	EE 320	EE 423
EE 433	Electromechanical Energy Conversion Laboratory	1(0,0,2)		EE 430
EE 445	Electrical Power Laboratory	2(0,0,4)		EE 441
EE 457	Applied Control Laboratory	1(0,0,2)		EE 456
EE 459	Advanced Logic Design Laboratory	1(0,0,2)		EE 458
Total		3		

(X,Y,L) X = Lectures; Y = Tutorials; L = Lab.

Table 5F: ELECTRICAL ENGINEERING ELECTIVE COURSES

Student chooses 27 credit hours from the following table. Student can also choose the course EE 998 as an optional course

Course Code	Course Title	Cr. Hr. (X,Y,L)	Requisites	
			Pre-	Co-
EE 400	Digital and Analog Electronic Circuits	3(3,1,0)	EE 310	
EE 403	Semiconductor Devices	3(3,1,0)	EE 310	
EE 404	Solar Cells and Photovoltaic Systems	3(3,1,0)	EE 310	
EE 405	VLSI Circuit Design	3(3,1,0)	EE 310	
EE 407	Electronic Communication Circuits	3(3,1,0)	EE 310 EE 320	
EE 408	VLSI Technology and Fabrication	3(3,1,0)	EE 310	
EE 409	Electronic Instrumentation	3(3,1,0)	EE 310	
EE 410	Optoelectronic Devices and Systems	3(3,1,0)	EE 310	
EE 412	Low Power VLSI Design	3(3,1,0)	EE 405	
EE 415	Principles of Nanoelectronics	3(3,1,0)	EE 310	
EE 419	Introduction to Electronic Warfare	3(3,1,0)	EE 310	
EE 420	Digital Signal Processing	3(3,1,0)	EE 301	
EE 422	Digital Communications	3(3,1,0)	EE 320	
EE 423	Wave Propagation and Antennas	3(3,1,0)	EE 204	
EE 425	Satellite Communications	3(3,1,0)	EE 423	
EE 426	Microwave Engineering	3(3,1,0)	EE 204	
EE 430	Electromechanical Energy Conversion (2)	3(3,1,0)	EE 330	
EE 432	Power Electronics	3(3,1,0)	EE 310	
EE 435	Electric Drives	3(3,1,0)	EE 330 EE 432	
EE 436	Electrical Machine Dynamics and Stability	3(3,1,0)	EE 330	
EE 441	Power System Analysis	3(3,1,0)	EE 340	
EE 443	Power System Operation and Control	3(3,1,0)	EE 441	
EE 444	Power System Planning	3(3,1,0)	EE 340	
EE 446	High Voltage Engineering	3(3,1,0)	EE 340	
EE 448	Power Distribution Systems	3(3,1,0)	EE 340	
EE 449	Power System Protection	3(3,1,0)	EE 441	
EE 450	Computer Architecture Organization	3(3,1,0)	EE 353	
EE 453	Microprocessor and Embedded System Design	3(3,1,0)	EE 353	
EE 454	Advanced Control Systems	3(3,1,0)	EE 351	
EE 456	Automatic Control Applications	3(3,1,0)	EE 351	
EE 458	Advanced Logic Design	3(3,1,0)	EE 210	
EE 463	Wireless Communications	3(3,1,0)	EE 422	

EE 464	Optical Communications	3(3,1,0)	EE 204, EE 310, EE 320	
EE 465	Probability Theory with Engineering Applications	3(3,1,0)	STAT 101	
EE 466	Cryptography and Network Security	3(3,1,0)	EE320	
EE 468	Selected Topics in Communications and Signal Processing	3(3,1,0)	EE 301 EE 320	
EE 469	Selected Topics in Engineering Electromagnetics	3(3,1,0)	EE 204	
EE 470	Renewable Energy Engineering	3(3,1,0)	EE 310 EE 340	
EE 479	Selected Topics in Electrical Power Engineering	3(3,1,0)	EE 340	
EE 480	Introduction to Artificial Intelligence	3(3,1,0)	EE 351	
EE 481	Real Time System Design	3(3,1,0)	EE 353	
EE 482	Communication Networks	3(3,1,0)	EE 320	
EE 483	Digital Control Systems	3(3,1,0)	EE 351	
Total Elected		27		

(X,Y,L) X = Lectures; Y = Tutorials; L = Lab.

Table 5G: ELECTIVE DEPARTMENT OPTIONAL COURSES WITHOUT CREDIT HOURS

Course Code	Course Title	Cr. Hr.	Requisites	
			Pre-	Co-
EE 998	Research Project	0 (NP)	Successful completion of 129 cr. hr.	

NP=No grade (Pass or Fail)

Table 6 RECOMMENDED SEMESTER SCHEDULE – ELECTRICAL ENGINEERING PROGRAM*

Level 1			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
ENGS 100	English language	6(6,9,0)	
MATH 101	Differential Calculus	3(3,1,0)	
ENT 101	Entrepreneurship	1(1,0,0)	
CHEM 101	General Chemistry	4(3,0,2)	
ARAB 100	Writing Skills	2(2,0,0)	
Total		16	

Level 2			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
ENGS 110	English	6(6,9,0)	
CUR 101	University Skills	3(3,0,0)	
CT 101	IT skills	3(0,0,6)	
STAT 101	Introduction to Statistics	3(2,2,0)	
EPH 101	Health Education & Fitness	1(1,1,0)	
Total		16	

Level 3			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
IC 1xx	Optional IC course	2(2,0,0)	
PHYS 103	General Physics (1)	4(3,0,2)	
MATH 106	Integral Calculus	3(3,2,0)	MATH 101
MATH 107	Vectors & Matrices	3(3,2,0)	MATH 101
ENGL 109	Language & Communication	2(2,1,0)	
GE 104	Basics of Engineering Drawing	3(2,0,2)	
Total		17	

Level 4			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
PHYS 104	General Physics (2)	4(3,0,2)	PHYS 103
ENGL 110	Technical Writing	2(2,1,0)	ENGL 109
MATH 203	Differential and Integral Calculus	3(3,2,0)	MATH 106 MATH 107
GE 106	Introduction to Engineering Design	3(2,1,2)	GE 104
GE 201	Statics	3(3,1,0)	MATH 106 MATH 107
GE 203	Engineering and Environment	2(2,0,0)	CHEM 101 MATH 101
Total		17	

Level 5			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre- (Co-) requisite
EE 201	Fundamentals of Electric Circuits	3(3,1,0)	MATH 106
EE 203	Engineering Electromagnetics (1)	3(3,1,0)	MATH 203 PHYS 104
GE 211	Computer Programming in C++	3(2,0,2)	
MATH 204	Differential Equations	3(3,2,0)	MATH 203
EE 208	Logic Design	3(3,1,0)	
EE 210	Logic Design Laboratory	1(0,0,2)	EE 208 ^c
Total		16	

Level 6			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre- (Co-) requisite
EE 202	Electric Circuit Analysis	3(3,1,0)	EE 201 MATH 107
EE 204	Engineering Electromagnetics (2)	3(3,1,0)	EE 203
EE 205	Electric Circuits Laboratory	1(0,0,2)	EE 202 ^c
EE 301	Signals and Systems Analysis	3(3,1,0)	EE 201
EE 310	Microelectronic Devices and Circuits	3(3,1,0)	EE 201
EE 312	Basic Electronics Laboratory	1(0,0,2)	EE 310 ^c
IC xx	2 nd Elective Islamic Culture Course	2(2,0,0)	
Total		16	

Level 7			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre- (Co-) requisite
Math 254	Numerical Techniques	3(3,2,0)	MATH 107
EE 302	Modeling and Simulation Lab	1(0,0,2)	<i>EE301</i>
EE 320	Communications Principles	3(3,1,0)	<i>EE 301</i>
EE 330	Electromechanical Energy Conversion (1)	3(3,1,0)	<i>EE 202</i> <i>EE 203</i>
EE 340	Fundamentals of Power Systems	3(3,1,0)	<i>EE 202</i>
EE 353	Introduction to Microprocessors	3(3,1,0)	<i>EE 208</i>
EE 357	Microprocessor and Microcontroller Lab	1(0,0,2)	<i>EE 353</i> ^c
Total		17	

Level 8			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre- (Co-) requisite
EE 351	Automatic Control	3(3,1,0)	<i>EE 301</i>
EE 356	Control and Instrumentation Laboratory	1(0,0,2)	<i>EE 351</i> ^c
EE4xx	EE Specialized Elective Course	10 (10,0,0)	<i>Refer to Table 5</i>
IC 107	Ethics of the Profession	2(2,0,0)	
	Free Elective Course	2(2,0,0)	
Total		18	

Level 9			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
EE 4xx	Specialized Elective Courses	11(11,0,0)	<i>Refer to Table 5</i>
EE 496	Graduation Project (1)	2(2,0,0)	Complete successfully 129 credits hours and pass all courses in levels 1-7.
GE 403	Engineering Economy	2(2,1,0)	
IC 1xx	3 rd Elective Islamic Culture Course	2(2,0,0)	
Total		17	

Level 10			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
EE 4xx	EE Specialized Elective Course	9(9,0,0)	<i>Refer to Table 5</i>
EE 497	Graduation Project (2)	2(2,0,0)	<i>EE 496</i>
GE 402	Engineering Projects Management	3(3,1,0)	
EE 998	Research Project	0 (NP)	Complete successfully 129 credit hours
EE 999	Practical Training	1 (NP)	Successful completion of 110 credit hours
Total		15	

COURSE DESCRIPTION:

Please refer to the department website at:

http://engineering.ksu.edu.sa/en/courses_discription_EE

MASTER OF SCIENCE PROGRAM

The Electrical Engineering Department offers graduate programs leading to the degree of Master of Science in Electrical Engineering. The program has been designed to reflect the modern trends and developments in the Electrical Engineering curricula. The program is available with the following options in several specializations:

- Thesis Option.
- Non-Thesis Option.

Program Mission

The Master of Science Program in Electrical Engineering endeavors to prepare students in an area of specialization to meet the fast-growing expectations of the society. Program graduates will continually build on the attained knowledge and skills to demonstrate a prominent career in a wide range of professions in industry, government, as well as academia.

Program Goals

Goal 1: Prepare graduates to cope with the fast growing demands of society in their areas of specialization.

Goal 2: Emphasize on professional competence.

Goal 3: Provide graduates who would excel in research teams and solve engineering challenges.

Goal 4: Inspire graduates to demonstrate a prominent career in a wide range of professions in industry, government, as well as academia.

Aims of the Master Program:

- Offering specialized courses for electrical engineers.
- Development of production and service sectors in the Kingdom.
- Combining the university with industrial and technical sectors into common research programs.
- Promoting scientific and applied researches particularly that are related to development requirements of the kingdom.

MS Program Learning Outcomes:

Graduates of MS Programs will be able to:

Knowledge:

K1: Exhibit comprehensive-knowledge in a specialized area of electrical engineering.

K2: Identify main simulation and experimental analysis tools in their area of specialization.

Skills:

S1: Demonstrate proficiency in analyzing engineering problems using appropriate analysis and experimental tools.

S2: Apply advanced skills to solve complex engineering problems.

S3: Construct innovative designs that **optimize** the performance and **satisfy** the given constraints.

Competence:

C1: Evaluate simulation and experimental results and **compose** professional technical reports with comprehensive data evaluation, sound conclusions, and constructive recommendations.

C2: Excel in multidisciplinary environments.

C3: Reveal commitment to ethical and professional responsibility.

Requirements for MSc (Thesis Option) Degree Program:

1. Completing 24 credit hours of course work from the approved graduate courses as follows:

- 9 credit hours of common courses.
 - 15 credit hours of specialized electrical engineering courses following the Departmental regulations.
2. The student must successfully complete and defend a thesis on a selected research topic in the area of specialization.

Common Courses

Course Code	Course Title	Credit hours
GE 501	Computer Simulation of Engineering Systems	3 (3,0)
EE 502	Modelling of Stochastic Engineering Systems	3 (3,0)
Math 505	Numerical Linear Algebra	3 (3,0)

Electronics

Level	Course Code	Course Title	Credit hours
I	GE 501	Computer Simulation of Engineering Systems	3
	EE 503	Advanced Digital Circuit Design	3
	Math 505	Numerical Linear Algebra	3
II	EE 502	Modelling of Stochastic Engineering Systems	3
	EE 504	Electronic Devices	3
III	EE ---	<i>Course selected by the department from List 1-A*</i>	3
	EE ---	<i>Course selected by the department from List 1-A*</i>	3
	EE ---	<i>Course selected by the department from List 1-A or List 1-B *</i>	3
		<u>List 1-A</u>	
		EE 506 Advanced Analysis of Electronic Circuits	
		EE 507 VLSI Design	
		EE 508 Optoelectronics	
		EE 509 Embedded Systems	
		EE 510 Data Communication Integrated Circuits	
		EE 512 Applications of Integrated Circuits	
	EE 515 Microwave Electronics		
	EE 516 Selected Topics in Electronics		
	EE 517 VLSI Fabrication Technology		
	EE 519 System on Chip		
	<u>List 1-B</u>		

		EE 524 Communication Networks EE 526 Optical Communications EE 528 Digital Communications EE 550 Internet Technologies and E-Services EE 552 Advanced Microprocessors and their Applications EE 553 Computer Organization and Architecture EE 575 Mobile Communications	
	EE 596	Thesis Proposal Preparation	1
	EE 600	Thesis	1

* This course is selected by the department according to its capabilities and circumstances.

Communications

Level	Course Code	Course Title	Credit hours
I	GE 501	Computer Simulation of Engineering Systems	3
	EE 521	Electromagnetic Fields	3
	Math 505	Numerical Linear Algebra	3
II	EE 502	Modelling of Stochastic Engineering Systems	3
	EE 528	Digital Communications	3
III	EE ---	<i>Course selected by the department from List 2-A*</i>	3
	EE ---	<i>Course selected by the department from List 2-A*</i>	3
	EE ---	<i>Course selected by the department from List 2-A or List 2-B *</i>	3
		<u>List 2-A</u>	
		EE 524 Communication Networks	
		EE 526 Optical Communications	
		EE 571 Digital Image Processing	
		EE 572 Satellite Communications	
		EE 573 Information Theory	
		EE 574 Error Correcting Coding for Communication Systems	
	EE 575 Mobile Communications		
	EE 576 Selected Topics in Communications and Signal Processing		
	EE 577 Selected Topics in Electromagnetic waves and Microwave Engineering		
	<u>List 2-B</u>		
	EE 508 Optoelectronics		

		EE 510 Data Communication Integrated Circuits EE 515 Microwave Electronics EE 550 Internet Technologies and E-Services EE 551 Computer Controlled Systems EE 559 Intelligent Control Systems EE 585 Power System Operation and Control	
	EE 596	Thesis Proposal Preparation	1
	EE 600	Thesis	1

* This course is selected by the department according to its capabilities and circumstances.

Electrical Machines and Power Electronics

Level	Course Code	Course Title	Credit hours
I	GE 501	Computer Simulation of Engineering systems	3
	EE 532	The Generalized Theory of Electrical Machines	3
	Math 505	Numerical Linear algebra	3
II	EE 502	Modelling of Stochastic Engineering Systems	3
	EE 534	Power Semiconductor Converters	3
III	EE ---	<i>Course selected by the department from List 3-A*</i>	3
	EE ---	<i>Course selected by the department from List 3-A*</i>	3
	EE ---	<i>Course selected by the department from List 3-A or List 3-B *</i>	3
		<u>List 3-A</u>	
		EE 530 Design of Electrical Machines	
		EE 531 Advanced Theory of Electrical Machines	
		EE 533 Electrical Machine Dynamics	
		EE 535 Selected Topics in Electrical Machines	
		EE 536 Electrical Machines for Special Purposes	
		EE 537 Selected Topics in Power Electronics	
	<u>List 3-B</u>		
	EE 548 Power System Protection		
	EE 552 Advanced Microprocessors and their Applications		
	EE 596	Thesis Proposal Preparation	1

	EE 600	Thesis	1
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* This course is selected by the department according to its capabilities and circumstances.

Electrical Power

Level	Course Code	Course Title	Credit hours
I	GE 501	Computer Simulation of Engineering systems	3
	EE 585	Power System Operation and Control	3
	Math 505	Numerical Linear algebra	3
II	EE 502	Modelling of Stochastic Engineering Systems	3
	EE 546	High Voltage Test Techniques	3
III	EE ---	<i>Course selected by the department from List 4-A*</i>	3
	EE ---	<i>Course selected by the department from List 4-A*</i>	3
	EE ---	<i>Course selected by the department from List 4-A or List 4-B *</i>	3
		<u>List 4-A</u>	
		EE 544 Reliability Evaluation and Power System Planning	
		EE 547 Selected Topics in Power Systems	
		EE 548 Power System Protection	
		EE 549 Power System Dynamics	
		EE 581 High Voltage Transmission Systems	
		EE 582 Power System Transients	
		EE 583 Distribution System Engineering	
		<u>List 4-B</u>	
		EE 509 Embedded Systems	
	EE 524 Communication Networks		
	EE 533 Electrical Machine Dynamics		
	EE 534 Power Semiconductor Converters		
	EE 552 Advanced Microprocessors and their Applications		
	EE 559 Intelligent Control Systems		
	EE 560 Advanced Control Techniques		
	EE 596	Thesis Proposal Preparation	1
	EE 600	Thesis	1

* This course is selected by the department according to its capabilities and circumstances.

Control Systems and Computers

Level	Course Code	Course Title	Credit hours
I	GE 501	Computer Simulation of Engineering systems	3
	EE 551	Computer Controlled Systems	3
	Math 505	Numerical Linear algebra	3
II	EE 502	Modelling of Stochastic Engineering Systems	3
	EE 552	Advanced Microprocessors and their Applications	3
III	EE ---	<i>Course selected by the department from List 5-A*</i>	3
	EE ---	<i>A*</i>	3
	EE ---	<i>Course selected by the department from List 5-A*</i>	3
		<i>Course selected by the department from List 5-A or List 5-B *</i>	
		<u>List 5-A</u>	
		EE 550 Internet Technologies and E-Services	
		EE 553 Computer Organization and Architecture	
		EE 554 Performance Evaluations of Computing Systems	
		EE 557 Linear Systems	
		EE 559 Intelligent Control Systems	
	EE 560 Advanced Control Techniques		
	EE 561 Selected Topics in Computers		
	EE 562 Selected Topics in Control		
	<u>List 5-B</u>		
	EE 509 Embedded Systems		
	EE 524 Communication Networks		
	EE 536 Electrical Machines for Special Purposes		
	EE 571 Digital Image Processing		
	EE 573 Information Theory		
	EE 596	Thesis Proposal Preparation	1
	EE 600	Thesis	1

* This course is selected by the department according to its capabilities and circumstances.

Degree Requirements for M. Sc. (Non-Thesis Option) Program

1. Completing 36 credit hours of course work from the approved graduate courses as follows:
 - 9 credit hours of common courses.
 - 27 credit hours of specialized electrical engineering courses following the Departmental regulations.
2. The student must successfully complete a research project, which comprises two parts (EE598 & EE599), each having 3 credit hours. Each part is graded pass/fail.

Common Courses

Course Code	Course Title	Credit hours
GE 501	Computer Simulation of Engineering Systems	3 (3,0)
EE 502	Modelling of Stochastic Engineering Systems	3 (3,0)
Math 505	Numerical Linear Algebra	3 (3,0)

1- Electronics (Non-Thesis)

Level	Course Code	Course Title	Credit hours
I	GE 501	Computer Simulation of Engineering Systems	3
	EE 503	Advanced Digital Circuit Design	3
	Math 505	Numerical Linear Algebra	3
II	EE 502	Modelling of Stochastic Engineering Systems	3
	EE 504	Electronic Devices	3
	EE 506	Advanced Analysis of Electronic Circuits	3
III	EE 507	VLSI Design	3
	EE ---	<i>Course selected by the department from List 1-A*</i>	3
	EE ---	<i>Course selected by the department from List 1-A*</i>	3
IV	EE 598	Research Project (1)	3
	EE ---	<i>Course selected by the department from List 1-A*</i>	3
	EE ---	<i>Course selected by the department from List 1-A or List 1-B *</i>	3
V	EE 599	Research Project (2)	3
	EE ---		3

		<p><i>Course selected by the department from List 1-A or List 1-B *</i></p> <p style="text-align: center;"><u>List 1-A</u></p> <p>EE 508 Optoelectronics EE 509 Embedded Systems EE 510 Data Communication ICs EE 512 Applications of Integrated Circuits EE 515 Microwave Electronics EE 516 Selected Topics in Electronics EE 517 VLSI Fabrication Technology EE 519 System on Chip</p> <p style="text-align: center;"><u>List 1-B</u></p> <p>EE 524 Communication Networks EE 526 Optical Communications EE 528 Digital Communications EE 550 Internet Technologies and E- Services EE 552 Advanced Microprocessors and their Applications EE 553 Computer Organization and Architecture EE 575 Mobile Communications</p>	
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* This course is selected by the department according to its capabilities and circumstances.

2- Communications (Non-Thesis)

Level	Course Code	Course Title	Credit hours
I	GE 501	Computer Simulation of Engineering Systems	3
	EE 521	Electromagnetic Fields	3
	Math 505	Numerical Linear Algebra	3
II	EE 502	Modelling of Stochastic Engineering Systems	3
	EE 528	Digital Communications	3
	EE 571	Digital Image Processing	3
III	EE 524	Communication Networks	3
	EE ---	<i>Course selected by the department from List 2-A*</i>	3
	EE ---	<i>Course selected by the department from List 2-A*</i>	3

IV	EE 598	Research Project (1)	3
	EE ---	<i>Course selected by the department from List 2-A*</i>	3
	EE ---	<i>Course selected by the department from List 2-A or List 2-B *</i>	3
V	EE 599	Research Project (2)	3
	EE ---	<i>Course selected by the department from List 2-A or List 2-B *</i>	3
		<u>List 2-A</u>	
		EE 526 Optical Communications	
		EE 572 Satellite Communications	
		EE 573 Information Theory	
		EE 574 Error Correcting Coding for Communication Systems	
		EE 575 Mobile Communications	
		EE 576 Selected Topics in Communications and Signal Processing	
		EE 577 Selected Topics in Electromagnetic waves and Microwave Engineering	
		<u>List 2-B</u>	
		EE 508 Optoelectronics	
		EE 510 Data Communication ICs	
		EE 515 Microwave Electronics	
		EE 550 Internet Technologies and E- Services	
	EE 551 Computer Controlled Systems		
	EE 559 Intelligent Control Systems		
	EE 585 Power System Operation and Control		

* This course is selected by the department according to its capabilities and circumstances.

3- Electrical Power (Non-Thesis)

Level	Course Code	Course Title	Credit hours
I	GE 501	Computer Simulation of Engineering Systems	3
	EE 585	Power System Operation and Control	3
	Math 505	Numerical Linear Algebra	3
II	EE 502	Modelling of Stochastic Engineering Systems	3
	EE 534	Power Semiconductor Converters	3

	EE 546	High Voltage Test Techniques	3
III	EE 544	Reliability Evaluation and Power System Planning	3
	EE ---	<i>Course selected by the department from List 3-A*</i>	3
	EE ---	<i>Course selected by the department from List 3-A*</i>	3
IV	EE 598	Research Project (1)	3
	EE ---	<i>Course selected by the department from List 3-A*</i>	3
	EE ---	<i>Course selected by the department from List 3-A or List 3-B *</i>	3
V	EE 599	Research Project (2)	3
	EE ---	<i>Course selected by the department from List 3-A or List 3-B *</i>	3
		<u>List 3-A</u>	
		EE 531 Advanced Theory of Electrical Machines	
		EE 533 Electrical Machine Dynamics	
		EE 536 Electrical Machines for Special Purposes	
		EE 547 Selected Topics in Power Systems	
		EE 548 Power System Protection	
		EE 549 Power System Dynamics	
		EE 581 High Voltage Transmission Systems	
		EE 582 Power System Transients	
		EE 583 Distribution System Engineering	
		<u>List 3-B</u>	
		EE 509 Embedded Systems	
		EE 524 Communication Networks	
	EE 551 Computer Controlled Systems		
	EE 552 Advanced Microprocessors and their Applications		
	EE 559 Intelligent Control Systems		
	EE 560 Advanced Control Techniques		

* This course is selected by the department according to its capabilities and circumstances.

4- Control Systems and Computers (Non-Thesis)

Level	Course Code	Course Title	Credit hours
I	GE 501	Computer Simulation of Engineering Systems	3
	EE 551	Computer Controlled Systems	3
	Math 505	Numerical Linear Algebra	3
II	EE 502	Modelling of Stochastic Engineering Systems	3
	EE 552	Advanced Microprocessors and their Applications	3
	EE 553	Computer Organization and Architecture	3
	EE 557	Linear Systems	3
	EE ---	<i>Course selected by the department from List 4-A*</i>	3
	EE ---	<i>Course selected by the department from List 4-A*</i>	3
IV	EE 598	Research Project (1)	3

	EE ---	Course selected by the department from List 4-A*	3
	EE ---	Course selected by the department from List 4-A or List 4-B *	3
V	EE 599	Research Project (2)	3
	EE ---	Course selected by the department from List 4-A or List 4-B *	3
		<u>List 4-A</u>	
		EE 550 Internet Technologies and E-Services	
		EE 554 Performance Evaluations of Computing Systems	
		EE 559 Intelligent Control Systems	
		EE 560 Advanced Control Techniques	
		EE 561 Selected Topics in Computers	
		EE 562 Selected Topics in Control	
		<u>List 4-B</u>	
		EE 509 Embedded Systems	
		EE 524 Communication Networks	
		EE 536 Electrical Machines for Special Purposes	
		EE 571 Digital Image Processing	
		EE 573 Information Theory	

* This course is selected by the department according to its capabilities and circumstances.

COURSE DESCRIPTION:

Please refer to the department website at:

http://engineering.ksu.edu.sa/en/master_courses_discription_EE

PHD PROGRAM IN ELECTRICAL ENGINEERING

Electrical Engineering is a fast changing profession and there are rapid advances in research and development of different specialization of electro technology. To cope with such advancements, some electrical engineers usually need a much higher level of education and training. The Ph.D. program was initiated in the Electrical Engineering Department in 1412H (1991G). This program responds to the needs of national research and development centers for highly qualified specialists in electrical engineering capable of effective contributions to complex scientific and technical projects.

A good deal of the scientific thesis work of graduate students deals with advanced research, development and application problems in various fields of electrical engineering. The Department has directed its research abilities so as to benefit from the rapid advances in all fields in electrical engineering to match the needs and requirements of the development plans of the Kingdom of Saudi Arabia.

Program Mission

The Doctor of Philosophy Program in Electrical Engineering aspires to provide scholars with the aptitude and vigor to enhance the scientific knowledge in their area of specialization. Program graduates will demonstrate a prominent role in boosting the educational and academic activities of their organizations. They will also address the challenges faced by the society, through sound research and innovative solutions.

Program Goals

Goal 1: To **maintain** an effective environment that attracts prominent researchers and supports the invention of innovative solutions.

Goal 2: To **provide** graduates with the aptitude and vigor to enhance the scientific knowledge in their areas of specialization.

Goal 3: To **equip** graduates with competence and leadership qualities to demonstrate a prominent role in boosting the educational and academic activities of their organizations.

PhD Program Learning Outcomes:

Knowledge:

K1: Exhibit extensive knowledge of the major field along with comprehensive insight into the associated research trends.

K2: Identify major simulation and experimental tools required to conduct a research.

Skills:

S1: Enhance scientific knowledge through sound and innovative research.

S2: Demonstrate pedagogical skills in classrooms.

Competence:

C1: Synthesize research results into value-added science and communicate the outcomes through distinguished journals and conference proceedings.

C2: Illustrate leadership skills and **confirm** commitment to ethical and professional responsibility.

Degree Requirements

1. Completing 18 credit hours of course work from the approved Post Graduate (Ph.D.) Courses.
2. Passing the Ph.D. qualifying comprehensive exam.
3. Satisfactory completion of the Ph.D. thesis. The student can register in the Ph.D. thesis only after he passes the qualifying comprehensive examination. He also has to meet residency requirements.

The available PhD courses, in different specializations, are given below.

Electronics

- EE 610 Semiconductor Characterization Techniques
- EE 611 Semiconductor Device Modelling
- EE 612 Design and Technology of Solar Cells
- EE 613 Design and Application of Photovoltaic Systems
- EE 614 MOS Devices for Advanced VLSI
- EE 615 Analysis and Design of VLSI Circuits
- EE 616 VLSI Layout and Processing
- EE 617 Layout Design of Bipolar Integrated Circuits
- EE 618 VLSI for Fast Processing Systems
- EE 619 Advanced Topics in Electronics

Communications

- EE 620 Signal Detection and Estimation
- EE 621 Channel Coding Theorem
- EE 622 Advanced Digital Communications
- EE 623 Digital Signal Processing
- EE 624 Antenna Theory and Design
- EE 625 Propagation of Electromagnetic Waves
- EE 626 Secure Communication Systems
- EE 627 Advanced Network Planning and Tele-traffic Engineering
- EE 628 Radar Systems
- EE 629 Advanced Topics in Communications

Electrical Machines and Power Electronics

- EE 630 Advanced Theory of Electro-Mechanical Energy Conversion
- EE 631 Computer Aided Analysis of Electrical Machines
- EE 632 Special Types of Electrical Machinery
- EE 633 Computational Methods in Electromagnetics
- EE 634 New Concepts in Electric Machine Design
- EE 635 Voltage and Frequency Converter Systems
- EE 636 Special Drives and Reactive Power Control
- EE 637 Advanced Topics in Drives & Power Electronics
- EE638 Linear Electric Machines

Electrical Power

- EE 640 Large Scale System Analysis

- EE 641 Stability of Large Power Systems
- EE 642 Power System Operation and Security
- EE 643 Optimal Power System Planning
- EE 644 Reliability Evaluation of Power System
- EE 645 Electromagnetic Transients in Power System
- EE 646 Advanced Power System Protection
- EE 647 High Voltage Insulation
- EE 648 Corona and Field Effects of High Voltage Systems
- EE 649 Advances in Power System

Control Systems and Computers

- EE 650 Artificial Intelligence in Engineering
- EE 651 Parallel Processing and Programming
- EE 652 Computer Network Protocols
- EE 653 Computer Vision and Image Processing
- EE 654 Microprocessor Based Instrumentation & Control
- EE 655 Digital Control Systems
- EE 656 Non-linear Control Systems
- EE 657 Stochastic Control Systems
- EE 658 Adaptive and Learning Control Systems
- EE 659 Advanced Topics in Computer & Control

Seminar Courses and Thesis

- EE 661 Seminar (1)
- EE 662 Seminar (2)
- EE 663 Seminar (3)
- EE 700 Ph.D. Research

COURSE DESCRIPTION:

Please refer to the department website at:

http://engineering.ksu.edu.sa/en/phd_courses_discription_ee

FACULTY

The Electrical Engineering Department currently has 49 faculty members holding Ph.D. in different electrical engineering disciplines. Out of these, there are 17 Professors, 10 Associate Professors and 22 Assistant Professors. In addition, the department has 5 Lecturers and 10 Teaching Assistants. In addition, there are many Technicians, Research Assistants, and Engineers working in different laboratories.

- **Chairman:** Dr. Ahmed Almainan
- **Professors**

No	Name	Major Area	University	E-mail
1	Adnan S. Nouh	Systems Engineering, Signal Processing, Digital System, Pattern Recognition	Carnegie Mellon University, USA, 1973	asnouh@ksu.edu.sa
2	Abdulrahman I. Alolah	Electrical Machines, Power Electronics	University of Bradford, UK, 1986	alolah@ksu.edu.sa
3	Abdullah M. Shaalan	Power System Planning.	University of Manchester, UK, 1984.	shaalan@ksu.edu.sa
4	Abdurahman A. Al-Arainy	Power Engineering, High Voltage Insulation and Testing, EM Interference, Insulation Coordination	University of Toronto, Canada, 1982	aarainy@ksu.edu.sa
5	Saad M. Alghuwainem	Power System Engineering Power System Protection, Renewable Energy Systems.	University of Michigan, Ann Arbor, USA, 1986.	saadalgh@ksu.edu.sa
6	Abdulrahman M. Alamoud	Microelectronics and Photovoltaics.	University of West Virginia, USA, 1984.	alamoud@ksu.edu.sa
7	Saleh A. Alshebeili	Statistical Signal Processing.	University of Toronto, Canada, 1992.	dsaleh@ksu.edu.sa
8	Abdullah M. Alsuwailam	Microprocessor-based System Design, Programmable Digital System Design.	Bradford University, UK, 1986.	suwailam@ksu.edu.sa

9	Abdel Fattah Sheta	Microwave Engineering, Microstrip Antennas for Wireless Applications, MIC and MMIC Components	University de Bretagne Occidental, Brest, France, 1996.	asheta@ksu.edu.sa
10	Majeed A. Alkanhal	Modern Communication and Wireless Systems, Electromagnetic Scattering, Propagation and Radar Cross-Sections, Antenna Engineering, Electronic Warfare.	Syracuse University, US A, 1994.	majeed@ksu.edu.sa
11	Ibrahim Elshafiey	EM Computational Modeling, Biomedical Imaging, Data Fusion, Nondestructive Evaluation.	Iowa State University, USA, 1994.	ishafiey@ksu.edu.sa
12	Mohamed Abou El-Ela			mabouelela@ksu.edu.sa
13	Yasin Z. Khan	High Voltage Engineering and Power Systems	Kyushu University, Japan, 2004	yasink@ksu.edu.sa
14	Nacer Amara Debbar	Physics, Processing and Characterization of Semiconductor Devices.	University of Michigan, Ann Arbor, USA, 1983	debbar@ksu.edu.sa
15	Mohammed S. Al-Numay	Control of None Minimum Phase Systems, Modeling and Simulation of Digital Systems. Discrete-Time Analysis of PWM Systems, Digital Control of PWM Systems.	Georgia Institute of Technology, USA, 1997	alnumay@ksu.edu.sa
16	Ehab Awad	Optoelectronic systems	University of Maryland College Park, USA, 2003	eawad@ksu.edu.sa
17	Fahd A. Alturki	Control and Computer Engineering, Intelligent Control, Fuzzy Logic, Neural Networks.	University of Sheffield, UK, 1993.	falturki@ksu.edu.sa
18	Mamdooh Saud Alsaud	Design and Operation of Distribution System, Power System Reliability and Security Assessment,	McMaster University, Canada, 2007.	mamdooh@ksu.edu.sa

		Application of ANN in Power System Design.		
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• Associate Professors

No.	Name	Major Area	University	E-mail
1	Abdulhameed M. Al-Sanie	Communication Systems, Space Time Coding, Block Coded Modulation.	Syracuse University, USA, 1992.	sanie@ksu.edu.sa
2	Essam Al-Ammar	Power Systems, Electromagnetic Transients.	Arizona State University, USA, 2007.	essam@ksu.edu.sa
3	Yahya Alharthi	Radio Resource Management	University of Minnesota, USA	yalharthi@ksu.edu.sa
4	Ahmad Fauzi bin Abas	Optical Communications	University of Paderborn, Germany, 2006	aabas@ksu.edu.sa
5	Hamsakutty Vettikalladi	Communication Systems. Antennas and Microwave Circuits	Cochin University, India	hvetikalladi@ksu.edu.sa
6	Mohammed Alresheedi	Visible Light Communication	University of Leeds, UK	malresheedi@ksu.edu.sa
7	Dr. Basil AsSadhan	Network Security	Carnegie Mellon University, USA	bsadhan@ksu.edu.sa

• Assistant Professors

No.	Name	Major Area	University	E-mail
1	Saeed A. Aldosari	Signal Processing, Communication Systems,	Carnegie Mellon University, USA, 2005	dosari@ksu.edu.sa
2	Yasir A. Al-Turki	Sensor Networks.	Strathclyde University, UK, 2007	yasir@ksu.edu.sa
3	Mubashir Alam	Digital signal processing	Georgia Institute of Technology, USA	mubalam@ksu.edu.sa

4	Sami Alhumaidi	Radar Systems	Florida Institute of Technology, USA	sami@ksu.edu.sa
5	Essam Altubaishi	Mobile Communications	University of Waterloo, Canada	ealtubaishi@ksu.edu.sa
6	Irfan Ahmad	Control Systems	University of Grenoble, France	irfahmad@ksu.edu.sa
7	Wonsuk Ko	Control Systems	University of Leeds, UK	wkoh@ksu.edu.sa
8	Majid Altamimi	Wireless Communication	University of Waterloo	mtamimi@ksu.edu.sa
9	Omar Aldayel	Signal processing	Pennsylvania State University	omaldayel@ksu.edu.sa
10	Tariq Alshawi	Multi-dimensional signal processing.	Georgia Institute of Technology, 2018	talshawi@ksu.edu.sa
11	Yasser Binsalamah	Control and Artificial Intelligence	The Ohio State University	ybinsalamah@ksu.edu.sa
12	Majed AlOtaibi	Power System Planning and Operation	University of Waterloo	majedalotaibi@ksu.edu.sa
13	Ali Mohammad Albishi	Microwave Engineering	University of Waterloo	aalbishi@ksu.edu.sa
14	Anmar Arif	Power Systems	Iowa State University, Ames	anmararif@gmail.com
15	Ahmed Aalzuhair	Circuits and Embedded Systems	University of California, Los Angeles (UCLA)	aalzuhair@ksu.edu.sa
16	Saif Abdulmohsen Alsaif	Radar, Control and Intelligent Systems	The Ohio State University	saalsaif@ksu.edu.sa
17	Ahmed Almaiman	Optical fiber communications, free-space optical communications, All-optical signal processing	University of Southern California	ahalmaiman@ksu.edu.sa
18	Abdulaziz Alkuhayli	Power Systems	North Carolina State University	aalkuhayli@ksu.edu.sa
19	Yousef Hassoun	Communications	The Ohio State University	yhassoun@ksu.edu.sa
20	Faris Alfaris	Power electrics, power systems and Renewable Energy	North Carolina State University 2019	e-faris@hotmail.com

21	Abdullah Alghaihab	Wireless Circuits and systems. RF low power circuit design	University of Michigan-Ann Arbor, 2020	aalghaihab@ksu.edu.sa
22	Saleh AlSenaiddi	Power electronics	Saskatchewan University, Canada/King Saud University	salih@ksu.edu.sa
23	Mohammed Mabrook Alharbi	Power electronics		mohalharbi@ksu.edu.sa
24	Amr Mohamed Ragheb Allam	Optical Communications	King Saud University	aragheb@ksu.edu.sa
25	Mohammed Saleh Alshaykh	Optics and electromagnetics	Purdue University	malshaykh@ksu.edu.sa

• Lecturers

No.	Name	Major Area	University	E-mail
1	Ahmed Asalom	Power electronics	King Saud University, KSA	salloum@ksu.edu.sa
2	Khalid Al-Fayyadh	Electronics	Queen' University, Canada	alfayyadh@hotmail.com
3	Turki A-Madhu	Electronics	King Saud University, KSA	talmadhi@ksu.edu.sa
4	Ahmed Telba	Communication	University of Bradford, UK	atelba@ksu.edu.sa

• Teaching Assistants

No.	Name	Major Area	University	E-mail
1	Ghazi Mohammed Ishaq	Electronics	Menofia University, Menofia, Egypt	ghazi@ksu.edu.sa
2	Anas Abdullah Al-Hussayen	Electric Circuits	King Saud University	ahussayen@ksu.edu.sa
3	Abdulaziz Ali Alqahtani	Electric Circuits	King Saud University	aqhtani@ksu.edu.sa
4	Mohammed A. Al-Rumaih	Electrical Engineering Systems	University of Michigan, Ann Arbor	marumaih@ksu.edu.sa

- **Lab Engineers**

Responsible of all Laboratories: Mr. Abdulaziz Al-Shehri

Lab Responsible	Lab Name	Email
Mr. Ali Ahmed Ali Aseeri	Electrical Circuits Laboratory	aaassiry@ksu.edu.sa
Eng. Osama Abdulkareem Kayed	Electrical Communications Laboratory	okayed@ksu.edu.sa
Eng. Omar Mohammad Al Assaif	Electronics Laboratory	-
Eng. Nissar Rasool Wani	High Voltage Laboratory	nrasool@ksu.edu.sa
Mr. Mohammad A. Al-Hamidi	High Voltage Laboratory	-
Eng. Hayder A. Al-Ghalban	Digital Logic Laboratory	hatteya@ksu.edu.sa
Eng. Umar A. Bawah	Electromech. Energy Conversion Laboratory	baumar@ksu.edu.sa
Mr. Sulaiman Al-Hudaib	Electromech. Energy Conversion Laboratory	-
Eng. Abulrahman Al-horaish	Electrical Measurement Laboratory	-
Eng. Abdul Waheed M. Hafeez	Microprocessor Laboratory, Nuclear Engineering Labs	ahafeez@ksu.edu.sa

ADVISORY BOARD

The Electrical Engineering programs keep strong ties with industry through the Electrical Engineering Advisory Board (EEAB). EEAB provides a reasonable cross-section of current and future employers of our graduates. The board contributes to the evaluation of department program objectives. With high level of knowledge of the current economic climate for electrical engineering and with experience of current and future employer needs in the Kingdom, EAB has a major role in continuous improvement of undergraduate and graduate EE programs.

Mission

Through a tight link with industry, our programs will flourish and develop and industry will value our programs and look for our graduates.

Organization

Chair of Electrical Engineering Department heads the board. Members represent different sectors of industry related to electrical engineering. In addition, board members include faculty members from EE department, EE accreditation committee and graduate studies committee.

Objectives

- Provide feedback on EE BS and graduate programs
- Propose suggestions on updating and developing program resources.
- Update students on current progress in industry in the Kingdom in the field of electrical engineering.
- Carry information about quality of EE graduates to industry.

History

EAB has been in close cooperation with EE BS program for more than a decade. In 2020, EE graduate programs started to prepare for accreditation, and EAB added MS and PhD programs to focal point of interest.

Current EEAB Members

The EAB has been reformed with new members and a virtual meeting was held on Nov 1, 2020. The EAB members are:

Eng. Ibrahim Al-Abbas

Eng. Al-Abbas have over 30 years of experience in the Saudi marketplace with track record success in various capacities and functions.

Eng. Khalid Abdulrazaq Alsanea

Eng. Alsanea has more than 15 years of engineering, management and leadership. Currently he holds the Public Policy & Regulatory Consultations Director at STC.

Dr. Majid Ali Albahkali

Dr. Albahkali is the current co-director of the Center for Excellence for Earth and Space Science at Caltech and KACST. His research interests are related to remote sensing, radar imaging, surface, and subsurface SAR imaging algorithm problems.

Eng. Ziad H. Al-Musallam

Eng Al-Musallam is a senior technology executive with over thirty years of experience in strategically strengthening local hi-tech capabilities and localization of electronics manufacturing and software industries. He is currently the Executive VP of Engineering & Operations (E&O) at AEC

Dr. Abdullah Abdulaziz Almehezia

Dr. Almehezia is currently the director of the National Center for Electrical Systems Technology at King Abdulaziz City for Science and Technology (KACST) where he is working on electrical distribution networks monitoring systems. His main research interests are related to renewable energy resources and energy storage integration and optimization, power system planning, operation, and economics.

Prof. Khalid Abdulaziz Al Mashouq

Prof. Al Mashouq is a Telecom Industry Veteran and a seasoned Entrepreneur. He is a member to several world class organizations including IEEE and Saudi Telecom Society. He has a consolidated experience of 33 years including working as Board member, C level positions, Transforming SME to Large Company, Academics, Planning, Design/Implementation of Mega Projects and mentoring several senior research projects.

Eng. Abdullah Abdulrahman Bin Askar

Eng. Bin Askar is an electrical engineer with 12 years of experience in the field of power distribution and customer services. I have been working for the Saudi Electricity Company since 2009 and I currently hold the position of Director of Operation and Maintenance Support Department within the distribution and customer services business line.

Dr. Faisal Alquaied

Dr. Faisal Alquaied has worked as a principle investigator to lead a Saudi scientist team to participate in building many systems at King Abdulaziz City at Science and Technology (KACST). In addition, he is consultant as a Subject Matter Expert (SME) at General Authority of Military Industry (GAMI). He has participated in many committees at different Saudi Agencies to select the needed systems for their operations, which lead to write many Statement of Requirements (SOR) and negotiate with more than 100 companies (local and international).

LABORATORIES

The laboratory facilities of the Department are one of the largest per international standards. Highly specialized engineers supervise these laboratories with the advice of concerned Faculty. The Department is continually modernizing and developing its laboratory facilities to cope with the rapid advances in all scientific fields and specialization so that it enables undergraduate and graduate students to attain the maximum benefit of modern techniques and instrumentations. The Major laboratories used by graduate students of the Department are listed below:

1. High-voltage Laboratory
2. Microwave Circuit Laboratory
3. Power system Laboratory
4. Communications Network Laboratory
5. Electrical Machine Laboratory
6. Microprocessor Laboratory
7. Automatic control laboratory
8. Optical Communications Laboratory
9. Microwave Laboratory
10. Electromagnetic field application Research Laboratory (EMFar)-SAR Laboratory
11. Liquid insulators Research Laboratory
12. Senior Design Project Laboratory

The University provides annual fund for the Department every year to update all Labs with new equipment. The following table shows the fund provided by the University to the Electrical Engineering Department through the last four years.

A brief account of these facilities is given in *Appendix - A*

RESEARCH UNITS

The department has a very well known reputation in the field of scientific electrical engineering research. A number of internationally known and heavily cited researchers are among staff of the department. Several research chairs and centers of excellence, have been established in the department over the last few years. More than 25 staff members are working in them as professors, research fellows, research assistants, lab engineers and technicians etc. A list is given below:

1. Saudi Aramco Chair in Electrical Power (2008)
2. Chair in Power System Reliability and Security
3. A State-of-the-Art VLSI Design Center (2005)
4. An Advanced Application Specific IC Research Center (2011)

DEPARTMENT COMMITTEES

The department has several committees and units that assist in managing academic and administrative affairs of the department. The following are department committees and their goals:

Accreditation and Quality Committee

The Accreditation Committee is one of the core committee in the department, it conducts intensive studies related to the measures taken by the department for quality assurance. The committee is comprised of faculty members appointed by their peers from within the department. The members represent different groups within the Electrical Engineering department.

Accreditation Goals of the Committee:

This committee consists of:

- Committee Coordinator (Teaching faculty member)
- Different work groups consisting of faculty members from different specialization.
- Graduate student members

	Members	
1	Dr. Ibrahim Elshafiey	Coordinator
2	Dr. Saad M. Alghuwainem	
3	Dr. Ahmad Fauzi bin Abas	
4	Dr. Hamsakutty Vettikalladi	
5	Dr. Irfan Ahmad	
6	Dr. Mohamed Abou El-Ela	

Accreditation Goals of the Committee:

This committee seeks to spread the concept of academic accreditation and its implementation mechanisms in the department by holding seminars and workshops, as well as following up the department's progress in implementing national and international accreditation requirements.

Responsibilities of the Unit:

- Work to implement and follow-up evaluation and academic accreditation.
- Preparing the self-study report, documents and supporting evidences.
- Preparing and analyzing questionnaires.
- Analyze the course report, reviewing it and also reviewing the required improvements.
- Preparing the annual report for the program and reviewing it and the required improvements.

Quality Assurance Goals of the Committee:

This committee seeks to achieve a high level of quality of academic and administrative performance of the department's employees, including faculty and administrators, in line with the college's strategy, and with the goal of gaining the confidence and satisfaction of the department's stakeholders and other relevant parties.

This committee seeks to follow up the implementation of the college's strategic plan with specific goals and programs that lead to the development of the quality of the educational, research and administrative process.

The committee also publishes the concept of the Quality Management System for King Saud University (QMS-KSU) and follows up on the implementation of the recommendations of the System Evaluator Report.

Finally, it seeks to implement the requirements of the international standard ISO 9001: 2015 and to maintain its continuity.

Responsibilities of the Committee:

- Spreading a culture of quality among faculty members, students, and department employees.
- Preparing periodic reports on performance levels and beneficiaries' satisfaction in every activity.
- Preparing the department for review by the evaluation committee, following up the evaluation, and developing improvement plans.
- Application of the university's system for quality management
- Documenting data and information on quality activities and performance levels in the department. Preparing a periodic report in this regard.
- Supervising the implementation of the executive projects of the college's strategic plan
- Implementing the requirements of the international standard 9001:2015 and making the necessary checks continuously

Alumni Committee

Description of the Committee:

This committee consists of:

- Committee Coordinator (Teaching faculty member)
- Different work groups consisting of faculty members.

	Members	
1	Dr. Ahmed Aalzuhair	Coordinator (Information)
2	Dr. Mohammed Al Shaikh	Training
3	Er. Ibrahim Turki	

Responsibilities of the Committee:

Managing the alumni database

- Utilizing the alumni network in employment and training opportunities
- Informing the alumni of the department latest news

- Increasing the alumni engagement in department activities

Community Relations Committee

This committee consists of:

- Committee Coordinator (Teaching faculty name)
- Different work groups consisting of faculty members and employees based on need.

	Members	
1	Dr. Essam Altubaishi	Coordinator
2	Dr. Ahmed Aalzuhair	Information
3	Dr. Mohamed Abou El-Ela	
4	Dr. Abdurahman A. Al-Arainy	
5	Dr. Ahmed Telba	
6	Dr. Mohammad Siraj	Website

Responsibilities of the Committee:

- Preparing seminars and general lectures in areas related to the department which serve the community
- Organizing and supervising short courses and conferences in the department's fields for various community bodies
- Organizing and supervising field visits from the department's students and faculty members to the community
- Organizing and supervising visits of school students in order to introduce the department's capabilities and attract the students to gain interest in the department specialization
- Organizing open days for visits by workers in companies and institutions and students' families to introduce the department, its capabilities and the activities it carries out
- Introducing the department's activities, competencies and research capabilities to faculty members, as well as introducing laboratories and equipment available in the department by giving workshops and using various media platforms
- Providing laboratory, research and advisory services to various community bodies
- Also update and maintain department Website so that the activities of the department will be public

Laboratory and Risk Management Committee

Description of the Committee:

This committee consists of:

- Unit Supervisor (Teaching faculty member)
- Different work groups consisting of faculty members and lab engineers

	Members	
1	Dr. Abdurahman A. Al-Arainy	Coordinator
2	Dr. Essam Altubaishi	
3	Dr. Irfan Ahmad	
4	Er. Turki A-Madhi	
5	Er. Osama Kayed	
6	Er. Ali Aseeri	
7	Dr. Faris Alfaris	
8	Dr. Ibrahim Elshafey	

Goals of the Committee:

- Organizing fundamental training programs for laboratory employees and users on how to deal with risks and ways to prevent them
- Taking inventory of the labs human resources needs, available capabilities, and following up on maintenance and safety requirements.
- Receiving requests for devices and equipment, studying them and comparing them according to the needs of the department and the allocated budget.
- Planning for the requirements and development of the laboratories, classrooms, and equipment of the department such as offices, meeting rooms and private halls.
- Ensuring the organization of equipment distribution to laboratories, reviewing laboratories' contents inventories, and preparing a guide for the use and maintenance of each device.
- Preparing labor force requirements and lists in laboratories (technicians and laboratory engineers) and recommending qualifying training programs for them.
- Follow up the requirements for calibration and maintenance of devices and equipment.
- Follow up on the readiness of laboratories and classrooms and the requirements for maintenance and safety.
- Provide the requirements for the safety equipment required for the department's laboratories.
- Follow up on safety procedures and their application in laboratories and report any violations
- Follow up of covid-19 protocol in laboratories
- Seeking to raise the efficiency of the use of scientific research

Statistics and Information Committee

Description of the Committee:

This committee consists of:

- Committee Coordinator (Teaching faculty member)
- Different work groups consisting of faculty members.

	Members	
1	Dr. Yasser Binsalamah	Coordinator
2	Dr. Ahmed Telba	
3	Dr. Mohammed Ahmed	
4	Dr. Saeed Abdullah Aldosari	
5	Dr. Saif Abdulmohsen Alsaif	
6	Dr. Ahmed Asalom	

Responsibilities of the Committee

- Collect data and information about student's academic records and progress.
- Provide data and information for other units within the department.
- Analyze data to gain useful insight.

Graduate Study Committee

Description of the Committee:

This committee consists of:

- Committee Coordinator (Teaching faculty name)
- Different work groups consisting of faculty members.

	Members	
1	Dr. Mohamed Ramy	Coordinator
2	Dr. Majeed A. Alkanhal	
3	Dr. Hamsakutty Vettikalladi	
4	Dr. Saleh A. ALshebeili	
5	Dr. Saleh AlSenaiddi	

Responsibilities of the Unit:

- Provides advice regarding the admission requirements of the MSc and PhD programs.

- Provides advice regarding the MSc and PhD program content.
- Reviews applications of local and international applicants to MSc and PhD programs and provides recommendations regarding the suitability of the applicants.
- Provides academic advice to MSc and PhD students.
- Coordinates all academic and administrative tasks related to MSc and PhD study programs.
- Reviewing and developing study plans for graduate programs (MS and PhD) in the department.
- Nominating the applications of prospective students to the department council and conducting admission tests for applicants according to the program's need
- Proposing the operational plan for practical research based on the strategic plan of the college and presenting it to the department council

Committee of class-schedules, registration and examinations

- Preparing statistics on the number of students registered in the current semester and expected number of students for the next semester
- Specify the course offerings branches and capacities
- Preparing the academic schedule for the semester, allocating classrooms for all classes, and names of professors for all courses.
- Study cases of registration and final examination of the students and find possible solutions in accordance with the regulations
- Following up on updating the schedule during the registration process to solve any urgent registration problems.
- Preparing the academic responsibilities for the department's faculty members.

Research Committee

Description of the Unit:

This committee consists of:

- Committee Coordinator (Teaching faculty member)
- Different work groups consisting of faculty members.

	Members	
1	Dr. Abdulhameed M. Al-Sanie	Coordinator
2	Dr. Ali Mohammad Albishi	
3	Dr. Mohammed Alresheedi	
4	Dr. Ahmed Almaiman	

Main Responsibilities

- Update the research areas of the department in accordance with the latest area in EE
- Update the research funds available in KSU to the faculty
- Encourage faculty members in well reputed journal publications
- Preparing statistics on the current and completed research projects in the department and displaying the project titles on the department's website

Teaching Assistants and Scholarship Committee

Description of the Committee:

This committee consists of:

- Committee coordinator
- Faculty Members and teaching assistant

	Members	
1	Dr. Naif Almakhdob	Coordinator
2	Dr. Tariq Alshawi	
3	Dr. Saleh A. ALshebeili	
4	Dr. Saad M. Alghuwainem	
5	Er. Abdur Rahman Shahrani	

Goals of the Committee:

- Advise and assist teaching assistant with their applications for graduate school.
- Review the department's policy in appointing teaching assistants
- Preparing and reviewing the employment plan for teaching assistants in the department
- Examine the employment applications received by the department.
- Preparing exams, communicating with and interviewing candidates
- Complete all nomination requirements to be sent to the college
- Follow-up on the affairs of teaching assistants and visiting scholars, examining scholarship applications and extending the scholarship.
- Follow up and assist EE scholars abroad during their graduate studies.
- Coordinate between EE scholars abroad and the EE department

Continuous Education Committee

Description of the Committee:

This Unit consists of:

- Unit Coordinator (Faculty member)
- Different work groups consisting of faculty members

	Members	
1	Dr. Majid Altamimi	Coordinator
2	Dr. Abdulaziz Alkuhayli	
3	Dr. Ahmed Almaiman	
4	Dr. Ali Mohammad Albishi	Textbooks
5	Dr. Mubashir Alam	Scientific Lectures

Responsibilities of The committee

- Continuing Education Committee is responsible for Organizing and providing training programs for students and faculty in the field of electrical engineering
- Training OBE , new softwares etc...
- Also different areas that benefit them in their working life after graduation and their professional future.
- Providing seminars and workshops of well reputed resource persons from within and outside the country

Academic Advising and Student Guidance Committee

Description of the Unit:

This Unit consists of:

- Unit Coordinator (Faculty member)
- Different work groups consisting of faculty members from different specializations

	Members	
1	Dr. Omar Aldayel	Coordinator
2	Dr. Naif Almakhdob	
3	Dr. Adnan S. Nouh	
4	Dr. Ali Mohammad Albishi	
5	Dr. Tariq Alshawi	
6	Dr. Abdullah Alghaihab	
7	Dr. Yousef Hassoun	Student Affairs Committee

Goals of the Unit:

This committee strives to guide and direct students and help them know about the Department and its programs. It also strives to resolve problems and remove obstacles that the students may face during their studies, with the end goal being to improve their academic performance.

Responsibilities of the Unit:

- Spreading the culture of counseling/guidance throughout the Department.

- Appointing academic advisors from amongst the teaching faculty and registering them.
- Specific guidance relating to academic delinquency (poor performance, warnings, etc.)
- Following on outstanding performers, adding them to special lists in order to encourage them.
- Guiding students in terms of psychological needs, social needs, helping make the right choices in general, and referring cases to higher up as needed.
- Career guidance and assisting students in writing CVs/resumes, and interviewing skills.
- Giving introductory lectures about the academic programs and research activities, research tracks available in the department, answering questions about the specialization tracks.
- Preparing and distributing booklets and brochures related to the department.
- Supporting measures related to guidance (such as announcements relating to guidance activities, collecting student information).
- Collecting absent lists from teaching faculty in the 7th week and following up on cases of students missing more than 30% of attendance.

Practical Training Committee

Description of the Committee

This committee is composed of:

- Committee Coordinator (Teaching faculty name)
- faculty members

	Members	
1	Dr.Nacer Amara Debbar	Coordinator
2	Dr. Mohammed Al Shaikh	

Goals of the Committee:

This unit is responsible for coordinating with the College and Companies in order to get students opportunities to be trained (hands-on), and to supervise them, rate their performance, and verify/follow-up on the results, skills, and knowledge that were gained by the student as part of their training opportunity.

The practical training is one of the basic educational pillars of the bachelor's program at the College of Engineering; given the many benefits that the training achieves for the students and the agencies that train them. It represents an opportunity for the student to apply the knowledge and skills he acquired during

his studies. The training also provides the opportunity to carry out work that will grant him experience and practical skills. It is also an opportunity for the agencies that provide the training, to experience students and to know the suitability of their specialization to their needs.

Responsibilities of the Committee:

- They contact the agencies to explain to them the practical training and their benefits to them and to the students; Therefore, asking them to provide training opportunities for our students.
- Prepare a database of information regarding Companies that employ students and sending it to the Hands-on training unit of the College.
- Prepare lists and databases for student information, specifically including the progress of their training (I.e., completing 110 verifiable hours successfully), and their contact information.
- According to a set of criteria, the committee allocates the students to these opportunities. Several students find training opportunities for themselves; in this case the committee make sure that the chance is suitable.
- Directing students to the Training Unit of the College to direct them to the training places that they were accepted to.
- A member of the committee or design group coordinator from the department, follow up the progress of the student during their training.
- Receive the confidential/private report from the Companies (through the Training Unit of the College) and evaluating the reports.
- Receiving reports from the students and evaluating them and performing a verbal discussion about them.
- During and after completion of the training, the student must provide several documents:
 - a. A weekly report: describing the task carried out during the week
 - b. A confidential report: this report is sent directly from the supervisor of the student in the training agency to the colleague in the department
 - c. A detailed report of the training experience,
 - d. The student prepares and makes an oral presentation about his experience during the practical training to the committee member.
- The committee also make an annual evaluation to the suitability of the bodies providing the training to our students.

Student Rights Committee

Description of the Committee

This committee is composed of:

- Committee Coordinator
- faculty members

	Members	
1	Dr. Essam Altubaishi	Coordinator
2	Dr. Saeed Abdullah Aldosari	
3	Dr. Yousef Hassoun	

This committee is mainly responsible for the rights of the students.

Student Activity Committee

Description of the Committee

This committee is composed of:

- Committee Coordinator (Teaching faculty name)
- Different groups consisting of faculty members and president of student club

	Members	
1	Dr. Essam Altubaishi	Coordinator
2	President Student Club	Student
3	Dr. Omar Aldayel	
4	Dr. Abdullah Alghaihab	

This committee is dealing with various curricular and social activities of the student through student club.

Academic Plans Committee

This committee consists of:

- Committee coordinator (Teaching faculty name)
- One member or more to represent accreditation committee.
- One member or more to represent each specialty group.
- Different work groups consisting of faculty members and employees based on need.

	Members	
1	Dr. Abdulhameed M. Al-Sanie	Coordinator
2	Dr. Ibrahim Elshafiey (AC)	
3	Dr. Ahmad Fauzi bin Abas(Communication group)	
4	Dr. Irfan Ahmed (Control)	
5	Dr. Ehab Awad(Electronics)	
6	Dr. Wonsuk Ko (Power)	
7	Er. Khalid Al-Fayyadh (employee)	
8	Er. Ahmed Alsalom (employee)	

Responsibilities of the Committee:

- Conducting the necessary studies to determine the knowledge required for educational outcomes according to academic development, the needs of the labor market, and preparing the annual report of the program
- Preparing and implementing workshops for the proposed programs and/or new programs in the department (such as sub-programs, inter-programs, etc.)
- Comparison of study plans with similar academic programs from internal and external bodies
- Coordination with the Study Plans unit in the college regarding any update or development of study plans
- Submit the periodic annual report to the department committee
- Academic committee monitors the courses in each specialization and take decisions to change the pre-requisite or co re requisite of a course. Recently the committee requested from the specialized groups to revise the prerequisite and co-requisite of all 400 level courses.

Class Schedule, Registration and Exam Committee

Description of the Committee

This committee is composed of:

- Committee Coordinator (Teaching faculty name)
- Different groups consisting of faculty members , engineers and teaching assistants

	Members	
1	Dr. Mohammed Harbi	Coordinator Scheduling
2	Er. Ghazi Ishaq	
3	Er. Mohammed Ramih	Scheduling
4	Er Abdul Aziz Qahtani	Registration
5	Er. Mohammed Aqil	Scheduling

6	Ibrahim Turki	Registration
7	Er. Abdur Rahman Shahrani	Registration
8	Er. Adel Yousef	Admission

Committee activities:

- Class registrations for students.
- Preparing an initial draft of class schedules.
- Preparing a final draft of class schedules.
- Determine and change section capacities.
- Link sections with available faculty members.
- Preparing final exam schedules.
- Avoiding final exam conflicts for students.

Qualifying Exam Committee

Description of the Committee:

This committee consists of:

- Different work groups consisting of faculty members from different specialization.

	Members	
1	Dr. Saleh A. ALshebeili	Comprehensive
2	Dr. Adnan S. Nouh	Comprehensive
3	Dr. Yasin Z. Khan	Comprehensive
4	Dr.Nacer Amara Debbar	Comprehensive

Responsibilities of the Committee:

- Prepare PhD comprehensive exam (cognitive and intellectual aspect)
- Conducting qualifying oral exam for the PhD students
- The student can take the exam after completion of PhD courses
- The student has two chances to attempt the written/oral exam
- The exam is held once per semester
- The exam is prepared and executed by a specialized committee consisting of at least from 3 faculty members (associate professors and/or full professors).
- The committee has the right to seek help in preparing/executing the exam, whenever needed, from other faculty members.

Graduation Projects and Design Groups Committee

Description of the Committee:

This committee consists of:

- Coordinator
- faculty members.

	Members	
1	Dr. Abdel Fattah Sheta	Coordinator
2	Dr. Saleh AlSenaidi	
3	Dr. Mohamed Abbas	Graduation
4	Dr. Mohammad Siraj	

Goal of the Committee:

This committee aims to organize and supervise the completion of graduation projects in line with academic accreditation.

Responsibilities of the Committee:

Design Group Tasks

- Prepare lists of students who would join design groups.
- Conduct surveys to students on suggested topics of design groups.
- Collect information from faculty members on suggested design groups.
- Announce design groups and collect student preferences.
- Assign students to design groups.
- Follow-up with group coordinators on elective course requirements and arrange with the department to fulfil students elective course requirements.
- Follow-up with group coordinators about required resources including software are hardware tools and report the requirements to department chair.
- Follow-up with group coordinators about suggested practical training requirements of group students and report the requirements to department chair and practical training committee.
-

Graduation Projects Tasks

- Prepare lists and a database of students who meet the requirements for registration in the project in coordination with the registration committee
- Request graduation project proposals from design group coordinators based on student proposed tasks.

- Review graduation project proposals to ensure that they comply with academic accreditation requirements
- Distribute students to graduation projects and supervise student registration.
- Prepare introductory lectures on the requirements and skills of writing graduation project reports and presentation skills
- Organize and supervise the discussions of graduation projects at the end of the semester
- Collect and monitoring the grades of the graduation projects after the discussions are completed and approved by the head of the department
- Decide on the exceptional/top-notch projects for the College competitions each semester.
- Organize and following up on the library of projects and related messages in the department.
- Coordination with the college to propose multidisciplinary projects
- Coordination with the Practical Training Committee to benefit from practical training in graduation projects
- Update and develop project evaluation criteria.

Graduation Project Reports Competition Tasks

- Inform and educate students of EE 497 students about department exhibition.
- Instruct students on preparing videos.
- Collect project reports from graduating students and post abstract on the website.
- Collect nominations for participation in project competitions.
- Nominate department nominees for project completions to college.
- Supervise department project exhibition and arrange with industry to participate.

Promotions and Recruiting Committee

Description of the Committee

This Committee consists of:

- Committee coordinator (Teaching faculty member)
- Work groups from the Teaching faculty

	Members	
1	Dr. Saad M. Alghuwainem	Coordinator
2	Dr. Adnan S. Nouh	
3	Dr. Majeed A. Alkanhal	
4	Dr. Basil AsSadhan	
5	Dr. Yahya Alharthi	

6	Dr. Abdulaziz Alkuhayli	
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Goal of the Committee:

- Ensuring that the department's needs are met by appointing and promoting distinguished faculty, researchers and technicians.

Responsibilities of the Committee:

- Preparing and reviewing the department's faculty appointment plan
- Examining applications for appointment and ensuring that the candidate fulfills the conditions for promotion
- Forming a list of arbitrators based on specialization, submitting it to the department council and sending it to the college.
- Study requests for appointing faculty members
- Preparation of nomination forms
- Performing personal interviews

Purchases Committee

- This committee aims to provide materials, tools, apparatus, equipment and supplies for the Labs in Electrical Engineering Department. The main responsibility is to do the clerical paper work of purchasing.

	Members	
1	Er. Osama Kayed	Coordinator

ADMISSION REQUIREMENTS & REGULATIONS

Admission of Students

- Students are accepted by merit according to the following rule:

$$0.25x \text{ Mark of Achievement test} + 0.25x \text{ Mark of Capabilities test} + 5x \text{ cumulative GPA of preparatory year} + \text{points of the course Math140} + \text{points of the course Math150}$$

It should be noted that the Capabilities Test administered by the National Center for Assessment in Higher Education is similar to the General Aptitude Test (GAT) or to the SAT

- The college accepts 400 students for the first semester and 50 students for the second semester. The general rule of the college is to reach the target value of the student to faculty ratio of 20 recommended by the Ministry of Education (AFFAQ 2029)

Student and Course Transfer

Internal Student Transfer

- Student from Science Colleges of KSU must have a minimum cumulative Grade Point Average (GPA) of 4.0 out of 5.0
- Student from KSU Health Colleges must have a minimum cumulative Grade Point Average (GPA) of 4.0 out of 5.0, and they should have completed successfully or obtained an equivalence of the preparatory-year for the science colleges.
- The cumulative GPA is calculated after a student completes at least 12 hours after the preparatory year (not including courses of the university requirements: Islamic culture and Arabic language).
- If the college intake capacity is exceeded, the Dean of the College of Engineering may accept no more than fifty students satisfying the transfer criteria.
- Acceptance of students is done by merit when all the conditions are satisfied.
- Transfer from Humanitarian colleges is not accepted.

External Student Transfer

- The student must have a minimum cumulative GPA of 4.25 out of 5.0 or its equivalent from an accredited college of engineering
- The student must have a minimum score of 80% in mathematic courses studied in his college
- The student must have successfully completed at least 30 credit hours of his college requirements after the preparatory year (The equivalence

of the preparatory year completed by the student is done according to the University regulations. If the student did not study a preparatory year in his college, the University has the right to ask the student to study the KSU preparatory year for science colleges or whatever the University sees suitable after carrying out all the equivalences for the student)

Once these conditions are satisfied the student is considered as a visiting student and is allowed to register at least 12 credit hours according to his study plan in his previous college and in coordination with the KSU college-of-engineering. The 12 credit hours should not include courses of Islamic culture and Arabic language. The student must also obtain a GPA in the semester of at least 4.5 out of 5.

Students Allocation to College Departments

- During their first year at the college after the preparatory year, students must attend introductory orientation-presentations offered by the college departments so as to get acquainted with the nature of the different engineering disciplines.
- After successfully passing 28 hours during the first year at the college, a student submits electronically a request to the Deanship of Admission & Registration, prioritizing his preference of the different disciplines.
- Each department is given a number of students in accordance to its capacity and arrangement with the department and college..
- The priority of acceptance for admission in a department is given to those applicants with the highest GPA.

Students Transfer from other Departments of the College

- Students from another department of the college must have a cumulative Grade Point Average (GPA) higher than the lowest GPA admitted to the department.
- A prescribed form must be filled-in by the student for final approval by the college students affairs unit
- The priority of acceptance is given to the students with the higher grades, on the basis of available seats in each department.
-

Credit Transfer

It is permissible for the students to transfer credits of courses studied in a reputable engineering college if the courses are equivalent to those offered by the college departments. Approval of the department is prerequisite for the

transfer acceptance. Transferred credits are not included in the GPA but a grade of at least C should be scored to pass courses.

Practical Training

- A student is allowed to register for the practical training after successfully completes 110 hours, through the student portal (e-educate). No other courses are allowed for him during the practical training period.
- Local companies are contacted by Vice Dean for academic affairs to enquire about the possibilities of training the department students and the number of students that can be accepted.
- Replies from companies are kept in the electronic system of the college.
- All available training opportunities are sent to the department, and announced by the department for students.
- Student fill-in a form for the practical training and submit it to the department practical-training committee showing his choice of companies.
- Vice Dean officially contacts the companies and secures the placement of students.
- Student must get the training for the period is 10 weeks and submit weekly reports to the convener of the department committee for practical training.
- Company reports a confidential assessment of the student performance to the department.
- Department allocates the grade of the training as pass or fail based on the company evaluation and weekly reports.

Although the practical training is non-credited, it is required to satisfy the undergraduate degrees requirements.

APPENDIX – A: LABORATORIES

The following describes briefly the laboratories used by department students. The labs and a list of major equipment are found in the department website at:

http://engineering.ksu.edu.sa/en/Labs_EE

High Voltage Laboratory



Besides conducting regular laboratory classes for undergraduate/graduate students, the High Voltage laboratory at KSU is also extensively engaged in research and development works in the areas of breakdown phenomenon in insulating Medias, withstand voltage in different types of air gaps, surface flashover studies on equipment and electrical interference studies due to discharges from the equipment operating on high voltages. This lab also provides test facilities for testing various HV equipment as per various international standards to electric utilities and companies in the Kingdom as well as in the region.

Microwave Circuit Laboratory



This lab is mainly used for implementing microwave circuits like antennas, filter, RFID chip printing etc.

Power System Laboratory



The laboratory is well equipped to meet the requirements of undergraduate as well as graduate studies and research work. Practical demonstrations by lab experiments for power system generation, transmission and distribution concepts. Students are familiarized with the use of digital computer in the different aspects of power system analysis by using different software programs such as ETAP, PTI, and POWER! Through the Electrical Power Simulator, lab experiments related to polyphase voltage regulation, characteristics of interconnected and isolated power system, load flow analysis, characteristics of overhead transmission lines and characteristics and coordination of power system relays etc. can be performed.

Communication network lab



Mainly used for computer communication. Graduate and research students use this lab for doing their projects

Electrical Machines Laboratory



This lab is purposely designed to teach the aspects of electrical machines. It consists of various electrical machines ranging from DC generators to AC induction and synchronous machines. It is also equipped with facilities to teach power electronics and electric drives.

Microprocessor Laboratory



This lab gives students the practical exposure to Assembly language programming of microprocessors, computer architecture of 8088/8086 microprocessor family, assembly program development using debugger software, use of flow charts and other aids in software development, memory and I/O interfacing circuitry for microprocessors, interrupts, serial and parallel

data communications. The lab also hosts hardware projects in more advanced areas.

Automatic Control Laboratory

This laboratory is equipped with basic instruments and real time experiments that are necessary to familiarize the students with the basic concepts and updated technology in the control field. The undergraduate experiments are designed to reinforce and expand many concepts covered in the automatic control course, digital control course, and projects. This Lab is also equipped with fire extinguisher system and emergency electric switch.



Optical Communications Laboratory

This is a new laboratory that will be equipped with advanced modern equipment in order for teaching and advanced research in the field of Light wave Technology and Optical Communication networks.

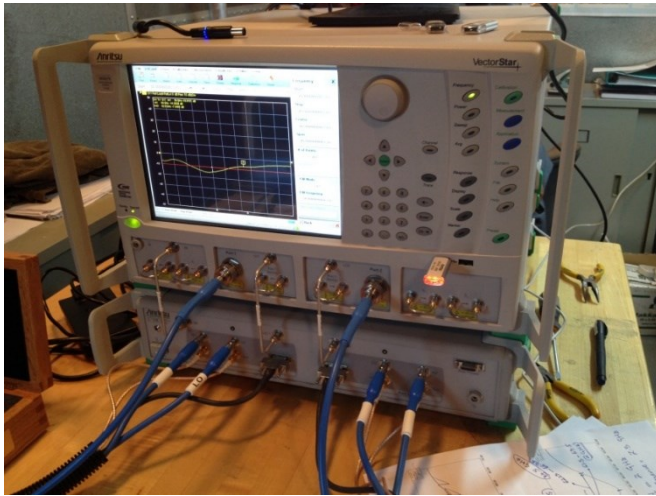
Undergraduate students will be served by this laboratory in different courses including Optoelectronics and Communication systems in addition to their senior graduation projects in the field of optical fiber communications and technologies.



This new lab is also intended to provide an appropriate environment for Master and PhD candidates in advanced fiber optic communication systems and subsystems. This includes Fiber-to-the-Home, Wavelength division multiplexing, Optical code division Multiplexing, next generation ultra-high speed and all-optical TDM and Ethernet technologies.

Microwave Laboratory





This laboratory helps the student in each of the design, simulation, fabrications and measurements of Microwave circuits. The Lab will help each of the undergraduate students and the teaching staff for their researches. This lab is well equipped with a microwave measurement system, Network Analyzer upto 40GHz and 145GHz and an anechoic chamber upto 18GHz. Also we have a time domain antenna radiation pattern set upto 18GHz. Undergraduate students will be served by this laboratory in their course project. This lab is also intended to provide an appropriate environment for Master thesis work, PhD thesis work and also faculty research in the field of Microwave and Millimeter wave systems

Electromagnetic Field Applications Research (EMFAR) Lab



The lab is used to investigate new applications of EM fields. The lab conducts research on communication systems and their interaction with human beings. Among the applications are characterizing the human exposure to electromagnetic fields by assessing specific absorption rate SAR. State of art SAM phantoms is used to assess SAR using a robotic arm is used to scan the field probe. Human tissue simulating liquids are used in the analysis. By focusing EM radiation as well as ultrasound radiation at particular regions, hyperthermia techniques are developed as an emerging tumor treatment modalities. The lab research projects cover real time communication systems and software define radio systems.

Liquid Insulators Research Laboratory

This lab is mainly focus on improvement and measuring dielectric properties of nanofluid as well as nano-composite insulators that are useful for researchers and designers of high voltage oil-filled components



Senior Design Projects Laboratory

The Senior Design Projects Lab is the result of cooperation between the Electrical Engineering Department and Alstom Company to equip a pioneering lab that provides potentials for students to succeed in completing graduation projects. Work on the project is in progress. The second phase of the project includes *installing lab furniture including desks and chairs, installing wall monitor, completing the entry system and completing the software tools and hardware systems.*

Lab photos December 2020



Lab photo March 2021



Lab photo August 2021



APPENDIX – B: SOFTWARE RESOURCES

This department supports students with software tools that are important for education and research in electrical engineering. Some of the available software's specific to department are shown below

1. Vivado of Xilinx
2. Tanner VLSI Design CAD tools from MentorGraphics
3. Cadence Design CAD tools
4. TINA 12 – Design suite Industrial version
5. TINA 12 – Design Suite Educational Version
6. COMSOL Multiphysics (MEMS module)
7. McLEOD thin film
8. Origin Lab
9. Matlab
10. CST Microwave Studio
11. Keysight pathwave like, Advanced system design(ADS), system design (System value), EM design (EMpro), RF system (Genesis) and RF IC Design (Golden gate).
12. Semcad software

In addition to this the college provide the following software tools to all the departments in the college.

S.NO	Software Name
1	Autodesk
2	Matlab
3	Solidworks
4	Hyperworks
5	ANSYS
6	Aspen
7	Acronis Deployment
8	Comsol
9	DPlot
10	EES
11	EMTP
12	Minitab
13	MD Solid
14	Techplot
15	Visual FEA
16	Working Model
17	Power word
18	PSIM
19	Visual Studio
20	Microsoft Office 2019
21	Creo Elements Direct 2D Access 17.0
22	Creo Elements Direct 3D Access 17.0 (x64)
23	Creo Elements Direct Drafting 17.0
24	Creo Elements Direct Modeling 17.0
25	Chemcad
26	EndNote
27	Labview
28	UserLock

29	Plaxis 3D
30	MS Project
31	Lingo
32	ProSim
33	Mathtype
34	SigmaPlot
35	ERDAS Foundation
36	Polymath
37	CES-Education
38	ArcGis

Electrical Engineering Program

The B.Sc. program in Electrical Engineering at King Saud University is accredited by the Engineering Accreditation Commission (EAC) of ABET <https://www.abet.org>

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