

جامعة الأمير  
سattam بن عبدالعزيز  
PRINCE SATTAM BIN ABDULAZIZ UNIVERSITY



**COLLEGE OF ENGINEERING IN  
WADI ADDAWASIR HANDBOOK**

**PRINCE SATTAM BIN ABDULAZIZ  
UNIVERSITY**

*Version 1.2*

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## PREFACE



Welcome to the College of Engineering- Wadi Addawasir,  
Prince Sattam bin Abdulaziz University.

An engineering college, with all its departments and disciplines, is considered one of the supporters of the country's economics. In this regard, the engineering role, based on knowledge of economics, is a permanent source of various energy resources, especially renewable ones. Of course, this is rather than its main role in the development of human resources. Therefore, the Colleges of Engineering have made great contributions in qualifying the engineers who are definitely the main part of industrial development. However, in this vast technology era, some changes in engineering careers have emerged rapidly to fulfill and track the new modern demands. This can justify the great importance of developing new strategies and plans that can help society by qualifying the engineers on modern methods in addition to activating the scientific research role. Because of the above and to match with the current Saudi National Orientation, the College of Engineering at Wadi Addawasir, Prince Sattam Bin Abdulaziz University (PSAU), relies on recent and international standards in building their future plans. This is accomplished by assigning goals that are based on the modern ways of the specific quality of the engineering learning outcomes. These outcomes are designed to be in the help of the labor markets as well as research and to open a new horizon towards the current industrial revolution. Additionally, they can also help in creating new job opportunities for the new generations. Fortunately, in the engineering disciplines, one can find that many big and sophisticated industrial products originally came from very simple ideas.

Thanks and Regards,

Dr. Mohammed Masoad Alhaider  
Dean, College of Engineering at Wadi Addawasir

# 1. INTRODUCTION TO PRINCE SATTAM BIN ABDULAZIZ UNIVERSITY

## 1.1 INTRODUCTION

Prince Sattam bin Abdul Aziz University (PSAU) was established under the Royal Decree No. M/7305 dated 3/9/1430H (05-03-2009) as Al Kharj University, and then was renamed to Salman bin Abdulaziz University under the Royal Decree No.45388 dated 12/10/1432H (27-11-2009). On 1/5/1436H (28-10-2014) a Royal Decree was issued to change the name of the University to be Prince Sattam bin Abdul Aziz University (PSAU).

The University includes colleges in five Governorate of Riyadh Region, which are Al Kharj, Hotat BaniTamim, Al Aflaj, Al Slayel and Wadi Addawasir. PSAU includes 22 Faculties in various majors such as Medicine, Engineering and Basic Sciences. The total enrollment is more than 28,000 students. PSAU aims to qualify its graduates who are able to compete in the labor market through education that meets international standards. It also provides the graduates with a research academic environment that has remarkable human resources, effective community partnership and a supportive administration system.

## 1.2 VISION, MISSION, CORE VALUES & OBJECTIVES

### University Vision 2030

*A university that is distinguished in education, competitive in research in support of knowledge economy, and effective in partnerships and social responsibility*

### University Mission 2030

*Delivering distinct education, developing ground-breaking research, enhancing partnerships and social responsibility through a stimulating academic environment, great-caliber human resources, cutting-edge technology, effective strategic partnerships and a supportive administrative system.*

### University Core Values

1. Perfection: observing Allah in all deeds, commitment to the finest quality. Standards and endeavoring for the achievement of distinction and continuous development.
2. Fairness: dealing with all personnel with equity, without any bias or favoritism.
3. Teamwork: infusing the collective Spirit of achievement and encouraging cooperation in achieving tasks and goals.
4. Transparency and accountability: documenting the University's performance reports and their propensities, publishing them with credibility, and answering all queries thereof without delay.
5. Social responsibility: the University is committed to enhancing social responsibility programs, to all personnel, especially for those with special needs.

6. National identity: we are committed to promoting the value of national loyalty amongst all personnel.

## **University Strategic Objectives 2030**

The University's main strategic objectives that emerged from diagnostic studies and reference comparisons are as follows:

1. Boosting the University status locally and globally.
2. Empowering students to compete in the labor market.
3. Attracting and developing distinguished human resources.
4. Continuous improvement of teaching and learning processes.
5. Developing graduate studies and academic research programs.
6. Continuous improvement of quality practices and applications.
7. Establishing effective strategic partnerships.
8. Sustainability of the financial resources of the University.
9. Improving a supportive administrative structure.
10. Developing programs to support social responsibility.

## **2. COLLEGE OF ENGINEERING**

### **2.1 INTRODUCTION**

Due to the continuous increase of secondary schools graduates at Wadi Addawasir Governorate and neighboring governorates and since the leadership is very keen to give the utmost support to the citizens and serve the local community, it was decided to establish the only male engineering college to teach engineering sciences in Wadi Addawasir Governorate that will offer programs that prepare graduates with the ability to engage in life-long learning, understand the importance of innovation, maintain sustainable development and appreciate the ethical values of modern electrical engineering.

### **2.2 VISION, MISSION, CORE VALUES & OBJECTIVES**

#### **College Vision**

*An outstanding college in engineering education, scientific research and community service.*

#### **College Mission**

*Preparing distinguished engineers in accordance with modern engineering requirements and standards and the continuous pursuit of possessing and providing knowledge and experience through a competitive academic research environment and excellence in community service through an effective administrative system*

#### **College Core Values**

1. Perfection: observing Allah in all deeds, commitment to the finest quality. Standards and endeavoring for the achievement of distinction and continuous development.
2. Fairness: dealing with all personnel with equity, without any bias or favoritism.

3. Teamwork: infusing the collective Spirit of achievement and encouraging cooperation in achieving tasks and goals.
4. Transparency and accountability: documenting the University's performance reports and their propensities, publishing them with credibility, and answering all queries thereof without delay.
5. Social responsibility: the University is committed to enhancing social responsibility programs, to all personnel, especially for those with special needs.
6. National identity: we are committed to promoting the value of national loyalty amongst all personnel.

### **College Strategic Objectives**

1. Attraction of the excellent students, taking care of them, develop their abilities and enabling them to compete in the job market.
2. Attracting the distinct faculty members, taking care of them and developing their capabilities.
3. Developing the education process, improving it and improving the standard of the graduates to compete with the graduates of other outstanding Saudi universities.
4. Activation of the remaining academic programs.
5. Increase in the participation in research projects and expanding scientific publishing.
6. Establishing an active system for serving the community and building effective societal partnerships.
7. Completion of vacant positions in the administrative structure and take care of staff members and motivate them and developing a supportive administrative system.

### **2.3 OBJECTIVES**

The main objective of establishing the College of Engineering in Wadi Addawasir is to rehabilitate and develop the competencies of engineering professionals capable of serving the public and private sectors in order to contribute effectively to the development of industrial, architectural and technical in Saudi Arabia through the pursuit of excellence in engineering education with quality and efficiency through the use of the latest educational methods and training and technical In addition to the following:

For students on the basics of scientific and technical knowledge and scientific thinking required for engineering work after obtaining a bachelor's degree.

Enable students to apply the knowledge and the possibility of engineering analysis and design projects and solving engineering problems.

Broadcast the confidence and knowledge of students in the project design.

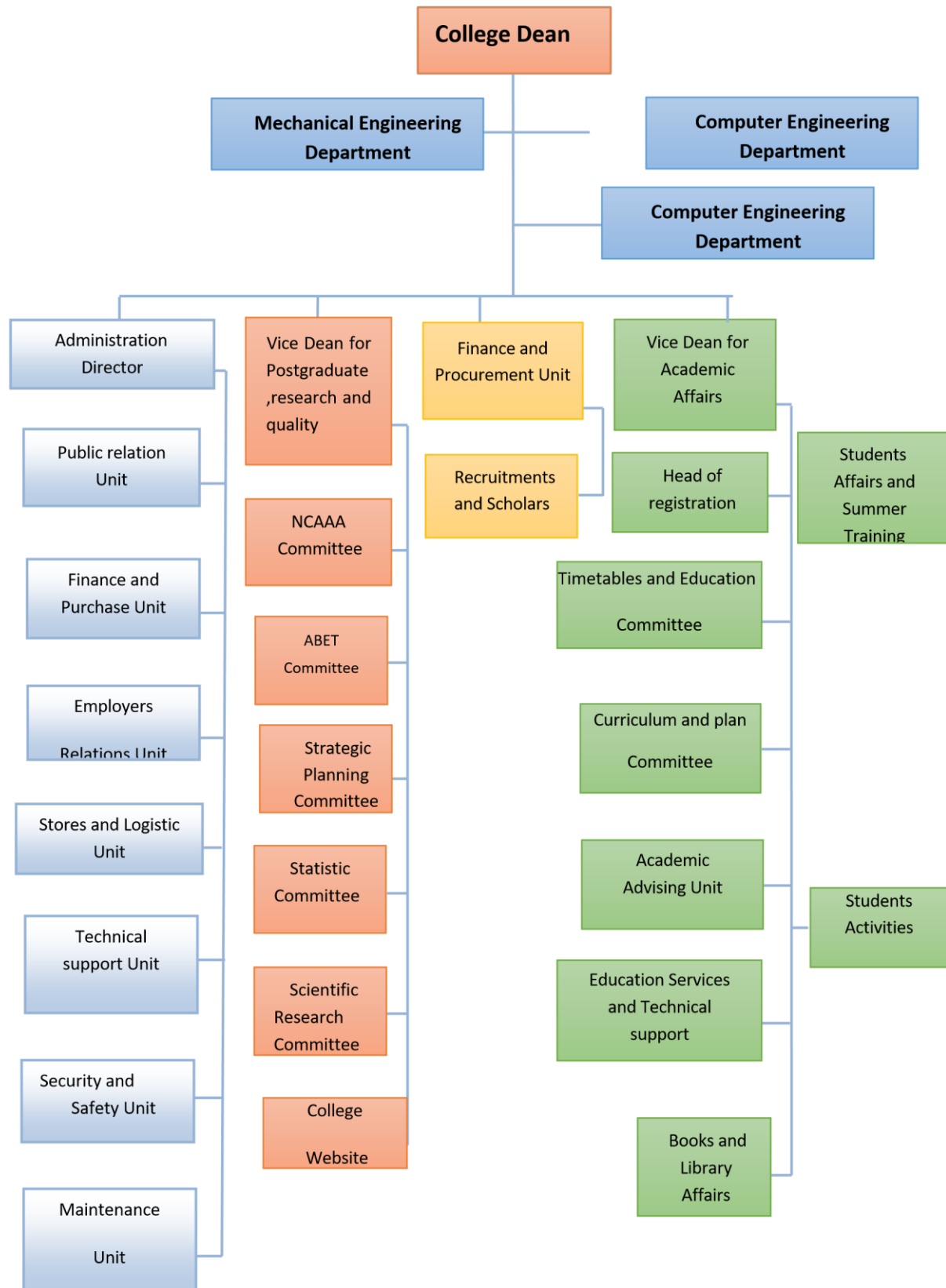
Student's ability to communicate with modern techniques and modern engineering, including information, qualifies them to enter the field of engineering.

Preparation of appropriate student preparation for Graduate Studies and Research in Engineering Sciences and various specialties.

### **2.4 ORGANIZATIONAL STRUCTURE**

The organization chart for the College of Engineering is illustrated in the Figure below.





## **2.5 DEPARTMENTS**

The college engineering presently runs only the Electrical Engineering department and proposes to introduce Mechanical Engineering and Computer Engineering departments.

### **2.5.1 Department of Electrical Engineering**

Electrical Engineering is among the most exciting and challenging areas of engineering and is the key discipline in a highly technological society. Electrical engineers have been driving the evolution of technology by being able to effectively apply fundamental concepts and integrate knowledge from various disciplines while pursuing frontier research, creating new ideas and innovations, and designing and developing new products.

#### **2.5.1.1 Program Educational Objectives**

The Electrical Engineering Department has defined three Program Educational Objectives (PEOs) for the B.S. program to satisfy the needs of the EE Program Constituencies. These PEOs are as follows:

- PEO-1. Graduates will meet the expectations of employers of electrical engineers.*
- PEO-2. Graduates will advance in their career and continue their professional development and successfully pursue graduate studies and lifelong learning.*
- PEO-3. Graduates will demonstrate leadership roles in their communities and/or professions.*

#### **2.5.1.2 Program Student Outcomes**

In order to prepare the next generation of Electrical Engineers, the faculty of the EE Program have adopted the ABET's Criterion 3 as the Student Outcomes of the Program.

The program faculty seeks input from the program's constituencies in the implementation of these Student Outcomes. These outcomes have been approved by the faculty members and the Advisory Board.

The Electrical Engineering program must demonstrate that graduates should satisfy the following:

- 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.*

## **2.6 CAREER CHANCES**

The graduates of the electrical engineering program may work in a variety of industries, including (but not limited to):

1. The constructions and contracting companies
2. The consulting and engineering offices
3. The general institution for water refined
4. The military occupations management
5. The water and sewage authority
6. The Saudi commission for the engineers
7. The general institution for ports
8. The Saudi Company for basic industries (SABIC)
9. The construction materials factories
10. The Saudi airlines
11. The Saudi Arabia Aramco company
12. The unified Saudi company for electricity (SCECO)
13. All engineering administrations in the governmental authorities
14. The projects' operation and maintenance administrations in the governmental authorities.

## **2.7 FACILITIES**

### **2.7.1 CLASSROOMS**

The College of Engineering provides 11 classrooms. Each Classroom is adequately equipped with chairs and desks, an E-podium, a data show, and a smart board. All classrooms are scheduled by the Deanship of Admission and Registration office. Each semester the Department is provided with a proposed course schedule for the next semester based on the previous semester's offering.



### 2.7.2 LABORATORIES AND EQUIPMENT

The EE department established all required specialized laboratories to conduct practical sessions of the program courses. They are well equipped with up-to-date equipment from esteemed specialized companies. In addition to these laboratories, there is a specially established senior project laboratory where students can do their graduation projects. The laboratories serving the teaching and laboratory activities within the EE Department are shown in the Table below.

No	Laboratory name	No of stations	Capacity (No of students)	Ratio of Laboratory/ students
1.	Electrical Circuit	12	20	1:10
2.	Microprocessor	12	20	1:10
3.	Measurement	12	20	1:12
4.	Electronics	12	20	1:12
5.	Digital Logic	12	20	1:12
6.	Communications	12	20	1:12
7.	Automatic Control	12	20	1:12
8.	Electric Power	12	20	1:12
9.	Electric Machine	12	20	1:12
10.	Power Electronics	12	20	1:12
11.	Senior Project	20	20	1:12
12.	Computer	40	40	1:20

### 2.7.3 Computer Lab

College of Engineering at Wadi Addawasir provides a Computer Lab for the students, which fits 40 stations. All the computers in the lab are linked to the internet. The essential softwares for modeling and designing are installed in the lab.



#### **2.7.4 Electronic Services (E-Services)**

The Deanship of Admission and Registration provides access to services at the electronic-gate system. Through the system, students can perform online registration/withdraw, monitor their attendance, and view their final transcripts/grades, etc.

#### **2.7.5 Library Services**

The Library in the college offered a good collection of books and non-book materials for the use by all faculty and students to support educational programs and research work. The library resources are accessed online. The libraries provide an ideal environment and dedicated space for the study and research of individual students and researchers. Our Library staff supports the training of the new faculty and students to make them aware of the available resources and how to use our library information systems.

The library collection is continuously growing with additional resources. The present collection of libraries is more than 200 book titles and subscriptions to many Journals. Library users have access to the full texts of different e-Journals, e-Books, Dissertations and Theses. Our Library is also a member of the Saudi Digital Library (SDL) ([sdl.edu.sa/SDLPortal/en/Publishers.aspx](http://sdl.edu.sa/SDLPortal/en/Publishers.aspx)), and all faculty and students can access their collection also.



### **3. GENERAL REQUIREMENTS FOR ADMISSION**

General admission requirements for Prince Sattam Bin Abdulaziz University are as follows:

An applicant for admission to the University must satisfy the following conditions:

1. He should have earned the secondary school certificate, or its equivalent, from inside or outside the Kingdom of Saudi Arabia.
2. He should have obtained the secondary school certificate (not earlier than five years); the University council has the right to waive this condition if convinced reasons are available.
3. He should not have been dismissed academically or disciplinary from Prince Sattam Bin Abdulaziz University or from any other university.
4. He must have a record of good conduct.
5. He must successfully pass any test or interview required by the university council.
6. He must be physically fit and healthy.
7. He must satisfy any other conditions the University may deem necessary at the time of application.

### **4. KNOWLEDGE OF ACADEMIC LOGISTICS AND TERMINOLOGIES**

It is a fact that studying at the University is completely different from that in earlier stages like secondary school. Therefore, this section presents different terminologies that are commonly used through studying at the University.

#### **4.1 ACADEMIC YEAR**

An academic year is divided into two regular semesters and a summer session, if any.

#### **4.2 ACADEMIC SEMESTER**

An academic semester is a period of no less than fifteen (15) weeks of instruction, not including the Registration and final examination periods.

### **4.3 SUMMER SESSION**

A summer session is a period not exceeding eight (8) weeks of instruction, not including the Registration and final examination periods. The weekly duration of each course in a summer session is twice its duration during the regular academic semester.

### **4.4 DEGREE PROGRAMS**

A program refers to a course of study leading to an award of a degree, e.g., B.Sc./B.Eng.

### **4.5 ACADEMIC LEVEL**

An academic Level indicates the level of study. The levels required for graduation are fifteen (15) levels.

### **4.6 COURSE**

A course is a subject of study within a certain academic level of the approved degree plan in each major or in other words a course is a component of a program, usually comprising a set of lectures, with practices or seminars. Each course has a number, code, title, and detailed description of its contents to distinguish it from other courses. A portfolio on each course is kept in its corresponding Department for follow-up, evaluation, and updates. Some courses may have prerequisite or co-requisite requirement(s).

### **4.7 COURSE PREREQUISITES**

All courses in the program are available to every student. Availability is governed by a set of prerequisites, which serve the academic purpose of ensuring that students have the background knowledge necessary to benefit from a course. Students must satisfy these prerequisites before taking the course, as the information presented builds on the previous courses. Exceptions to the prerequisites can be granted under unusual circumstances. To be granted an exception, a Petition Form must be filled out and approved prior to registering for the class. Advisors will not sign required forms for classes for which students do not meet the prerequisites and do not have permission for an exception. Any exceptions must be approved by the instructor, the advisor, the curriculum coordinator, and the department chair. Students registered for classes for which they have not taken the prerequisites and have not received approval run the risk of having their Registration for this class canceled, even though they may be well into the semester. Students anticipating the need to take classes without meeting the necessary prerequisites should begin discussing the possibility and options well in advance of advising week in order to allow time to get the necessary permission.

The prerequisites of each course offered in the Electrical Engineering Programm are described in this Catalog under the section of the Electrical Engineering Department.

### **4.8 CREDIT HOUR**

A credit hour is each of the weekly lectures, with a duration of not less than fifty (50) minutes or a laboratory session or field study of not less than 100 minutes duration.

### **4.9 CREDITS AND WORKLOAD**

Each course is "worth" a number of credits. A credit is a measure of student workload. University policy is that credit is equivalent to 3 to 4 hours of work per week. It is intended, therefore, that a 3-credit course requires 3x3x15 to 3x4x15 hours of work per semester, i.e., 135 to 180 hours. "Work" in this context includes all work associated with a course: lectures, practicals, preparation, revising, reading, assessment and so on.

### **4.10 MINIMUM COURSE LOAD**

The minimum Course load is the minimum number of credit hours a student can register, determined by his/her academic status and in accordance with the University Council decisions.

#### **4.11 ACADEMIC RECORD**

The academic record is a statement that explains the student's academic progress. It includes the courses studied in each term with course numbers, codes, number of credit-hours, the grades attained and the codes and points of these grades. The record also shows the semester, cumulative GPA and the student's academic status in addition to the courses from which a transferred student is exempt.

#### **4.12 ACADEMIC PROBATION**

Academic Probation is a notification given to a student with a cumulative GPA below the minimum acceptable limit.

#### **4.13 CLASS WORK SCORE**

Class Work Score is the score which reflects the student's standing during a semester according to his/her performance in examinations, research, and other activities related to a particular course.

#### **4.14 FINAL EXAMINATION**

Final Examination is an examination in course materials, given once at the end of every semester.

#### **4.15 FINAL EXAMINATION SCORE**

The final Examination Score is the score attained by a student in the final examination for each course.

#### **4.16 FINAL SCORE**

The final Score is the total sum of the class work score plus the final examination score for each course out of a total grade of 100.

#### **4.17 COURSE GRADE**

Course Grade is a percentage, or alphabetical letter, assigned indicating the final grade received in a course.

#### **4.18 INCOMPLETE GRADE (IC)**

It is permitted to delay the grade of a course due to non-completion of its requirements with the permission of the instructor and the approval of the Department Council. But this delay should be for no more than one main semester. If this delay lasts for more than one semester, the grade will automatically change to "Fail" (F) grade.

#### **4.19 IN-PROGRESS GRADE (IP)**

Some courses need more than one semester to complete their requirements, particularly those including research work or training. For these courses, the student can postpone his grade to "In Progress" (IP). The student will admit his grade upon completion of the course; otherwise, the department council could grade the course "Incomplete" (IC) in his transcript.

#### **4.20 SEMESTER GPA**

Semester GPA is the total quality points a student has earned, divided by the credit hours assigned for all courses taken in a given semester. Total quality points are calculated by multiplying the credit hours by the grade point in each course.



## **4.21 CUMULATIVE GPA**

Cumulative GPA is the total quality points a student has earned in all courses taken since enrolling at the University, divided by the total number of credit hours assigned for these courses.

## **4.22 GRADUATION RANKING**

Graduation Ranking is the assessment of a student's scholastic achievement during his/her study at the University.

## **4.23 GRADUATION**

A student graduates after successfully completing the graduation requirements according to the degree plan, provided his cumulative GPA and major GPA are both not less than 2.00 out of 5.00.

## **4.24 HONORS**

First Honor is granted to the student who acquire a cumulative average from (4.5) to (5.00) out of (5.00) at the time of graduation.

The second Honor is granted to the student who acquire a cumulative average from (3.75) to (4.4) out of (5.00) at the time of graduation.

For the student to acquire the first or the second honor, the following conditions are required:

1. Students should not fail any course taken at Prince Sattam Bin Abdulaziz University or any other university.
2. Students must fulfill the graduation requirements during a period; its maximum is the average between the minimum limit and the maximum limit of being in his faculty.
3. Students studying in the University who will graduate with at least (60%) of the graduation requirements.

## **4.25 ACADEMIC ADVISOR**

The academic advisor is one of the teaching staff. He is supposed to provide educational counseling for students. The academic advisor's primary responsibility is to evaluate the student's plan of study to ensure it will satisfy the college and university requirements while it meets each student's specific needs. To be effective, the advisor must recognize that each student has different abilities, interests, aspirations, needs, experiences, and problems so that his approach in dealing with students can be different from one to another. More information about the student's academic advisor and academic advising process can be found in the Student's Academic Advisor Handbook (<https://dar.psau.edu.sa/sites/uploads/dar/page/2021-11/1.pdf>).

## **5. REGISTRATION**

This section serves as the main registration guidance for the College of Engineering at Prince Sattam Bin Abdulaziz University. Your advisor is permanent; look for his help and guidance as follows.

### **5.1 ENROLLMENT PROCEDURE**

Under normal circumstances, all students are registered automatically through the University's computerized registration system following a model plan of study set by the Department. This plan includes all prerequisites and the maximum and minimum allowable number of credit hours per semester. The system allows the student to make changes and adjustments within the preset rules. It is during the first week of classes that students are allowed to make changes, such as add, drop, and

change sections. Afterward, only course withdrawals are allowed, provided they are done five weeks before the final examination period and with the head of the Department's approval. Nevertheless, a student can only drop courses or withdraw from courses if his workload will not fall below a minimum of 12 credit hours. Moreover, a student cannot withdraw from more than two courses per semester except with the permission of the Vice Dean for Academic Affairs. A student must confirm his Registration within the first week of the semester.

## **5.2 THE REGISTRATION TASKS**

### **5.2.1 Early Registration**

Early Registration is required for all college-level students who intend to continue their studies during the following term(s). Early Registration is done through the Web on the pre-announced dates. Since this activity provides a basis for finalizing courses to be offered, the number of sections to be opened for each course, the schedule of classes, manpower requirements, etc., for the term that follows, it is mandatory for every student to register early. Academic departments are therefore advised to ask their faculty members to stress the importance of early Registration to the students enrolled in their classes. Early Registration for the spring semester is held during the 11th week of the fall semester, and early Registration for the summer session and the following fall semester is held during the 11th week of the spring semester.

### **5.2.2 Formal Registration**

Formal Registration is held at the beginning of each semester or summer session as indicated in the academic calendar. Each student must personally register himself. Registration by proxy or mail is not permitted.

### **5.2.3 Late Registration**

The students, who have not completed the formal registration process on the fixed date, may register late during the period specified in the academic calendar.

### **5.2.4 Adding and Dropping Courses**

A student may change his Registration by adding or dropping some courses during the registration period determined by the Deanship of Admissions & Registration. A student may drop courses during the first two weeks of classes in a regular semester (the first week of classes in a summer session). Courses so dropped will not appear on the student's transcript.

### **5.2.5 Adding or Changing to Closed Sections**

During the registration period, a student can change section -- through the departmental secretary -- if the section is available.

The Department will process the section change only if the form is complete and it does not cause conflict with the student's current schedule. Also, the requests will only be considered during the registration period determined by the Deanship of Admissions & Registration.

## **5.3 COURSE LOAD**

A course load is defined as the number of credit-hours for which a student is registered in a regular semester or a summer session.

### **5.3.1 Minimum and Maximum Course Load Limit in a Regular Semester**

The minimum course load limit is 12 credit hours during a regular semester, provided that the total number of credit hours registered by a student in any two consecutive semesters is not less than 28. This condition is relaxed in the last semester before graduation. The maximum course load is 19 credit hours. However, a student is permitted to register for 21 credit hours with the approval of his department chairman if the student has maintained a minimum cumulative GPA of 3.00 out of 5.00 in all work undertaken during the preceding terms in which he earned his last 28 credit hours.

### **5.3.2 Minimum and Maximum Course Load in a Summer Session**

The minimum course load in a summer session is 5 credit hours, and the maximum is 10 credit hours.

### **5.3.3 Minimum and Maximum Course Load for a Student on Academic Warning or Probation**

The minimum course load in such cases is 12 credit hours; the maximum is 13 credit hours in each regular semester and 7 credit hours in a summer session.

### **5.3.4 Minimum and Maximum Course Load for a Student in his Last Term before Graduation**

The minimum course load at this level is 9 credit hours, and the maximum is 18 credit hours during a regular semester and 10 in the summer session, provided the student's cumulative GPA of all work undertaken during the preceding terms in which he earned his last 28 credit hours is not less than 2.00 out of 5.00.

### **5.3.5 Adding and Withdrawing Courses**

A student may change his Registration by adding or dropping some courses during the registration period determined by the Deanship of Admissions & Registration. A student may drop courses during the first two weeks of classes in a regular semester (the first week of classes in a summer session). Courses dropped will not appear on the student's transcript.

### **5.3.6 Transfer between Course Sections**

An academic advisor can transfer a student according to availability.

### **5.3.7 Degree Plan**

The courses of each degree are spread over 15 academic levels (trimesters). The required as well as elective courses and the number of credit hours that a student needs to successfully complete in order to receive a degree in his major field are clearly specified for each academic level. This distribution of courses and credit hours is called "the Degree Plan." All degree plans are approved by the University Council. The academic departments regularly review and update the degree plans in order to provide students with continuously updated programs. The following rules apply to the degree plans. Students are required to study within the framework of their approved degree plan, and once they fulfill all the requirements, they are nominated for graduation.

### **5.3.8 Student Transcript of Academic Record**

The transcript comprises the complete academic record of the student from the date of admission to the issue date. No partial records are issued. An official transcript may be issued or sent to any outside agency upon receiving a written request from the student. The accuracy of a student record is of the utmost importance, and errors or suspected errors should be brought to the immediate attention of the Deanship of Admissions & Registration.

### **5.3.9 Attendance monitoring and rule of students' exclusion from attending the final examinations**

Believing that regular course attendance is necessary for academic success, Prince Sattam Bin Abdulaziz University requires that students do not miss more than 25% of the total number of lectures, labs and tutorials. The instructors regularly register the students' attendance in the courses via Prince Sattam Bin Abdulaziz University's electronic admission system.

If a student has a total absence of more than 25 % during a semester period in a certain course, the course's instructor report to the Deanship of Admission and Registration to exclude that student from the final exam of this course and earn a DN (Denied) grade in that course. Furthermore, the student who is absent in the final examination of a course(s) is not given a make-up examination except for a valid reason accepted by the college council. Student monitoring during the lab courses is done by the lab. Instructor for the laboratory sessions. Attending the lab. And performing the experiments is essential. The student is not allowed to submit a laboratory report if he did not carry out the experiment by himself.

## **6. TRANSFER POLICIES**

Transfer of students to the college can be done through different channels. There are three types of transfer:

1. Transfer from other equivalent institutions.
2. Transfer of students within Prince Sattam Bin Abdulaziz University.
3. Transfer between Departments of the College of Engineering.

These channels are explained below.

### **6.1 TRANSFER FROM OTHER EQUIVALENT INSTITUTION**

A student may transfer from another equivalent university or educational institution to Prince Sattam Bin Abdulaziz University according to the following requirements:

1. The student studied and transferred from a recognized university or educational institution.
2. The student should not have been dismissed for any disciplinary reasons from the institution that he has transferred from.
3. The freshman must spend at least two semesters in his University before being allowed to transfer to Prince Sattam Bin Abdulaziz University. The transferred student should study at Prince Sattam Bin Abdulaziz University not less than 60 % of the total units required for the bachelor's degree by the University.
4. The student who had previously studied at Prince Sattam Bin Abdulaziz University and then went to another university and he wants to return back again to Prince Sattam Bin Abdulaziz University, his new ID in Prince Sattam Bin Abdulaziz University will be the same as before leaving Prince Sattam Bin Abdulaziz University.
5. The student should fulfill the conditions of the Department and college he wants to transfer to. The Department and College Councils determine the courses he taught and the courses he should study, as well as at which level he should continue his study after evaluating his credit hours.
6. All student transfer rules that the university council specified are applicable to the student case.
7. The procedure for evaluating transfer applications to the College of Engineering from outside the University is as follows:

8. The student must satisfy the college admission conditions, which are announced on the College website.
9. Fill in the university application form.
10. Upon receiving all applications, the Deanship of Admission and Registration collects and sends all applications that satisfy the college requirements to the college's dean. The college dean evaluates the presented applications information
11. and makes decisions on transfer applications via a committee (College based committee).
12. The College Council approves the transfer courses that the student has studied out of the University according to the recommendation of the appropriate Department. The courses which have an average of less than 2.0 (grade C) out of 4.0 will not be considered.
13. If it is found that the student has been dismissed before for any disciplinary reasons, the student registration will be canceled from the date of acceptance of his transfer to the University.

## **6.2 TRANSFER OF STUDENTS WITHIN PRINCE SATTAM BIN ABDULAZIZ UNIVERSITY**

To transfer from other colleges within Prince Sattam Bin Abdulaziz University, the student must satisfy the College of Engineering admission conditions which are announced on the College web site. These conditions are as follows:

1. Student can apply for transfer only after studying at least two semesters, excluding summer semester, in the college he is transferring from.
2. The student must not have spent more than four semesters in his college, which he wants to transfer from it.
3. The student should not have been transferred from another college within the University.
4. The procedure for evaluating transfer applications is as follows:
5. Fill in the transfer form (Inter-College Transfer Form) within the dates announced by the University. Submit the transfer form to the Deanship of Admission and Registration to ensure the availability of the general conditions to transfer to the College of Engineering.
6. Submit the form to the college's dean and then to the College based committee.
7. Upon receiving all applications, a designated college-based committee (which consists of the vice dean and the heads of all departments) meets and recommends transfer applications.
8. The tentative transfer decisions are then forwarded to the dean for final approval.
9. The academic committee of each Department reviews transcripts of all tentatively accepted transfer students and decides on the equivalency of credits based on an equivalency table of credits approved by the College Council.
10. All transfer applications shall be returned to the Deanship of Admission and Registration after approval by the president of the University. The registrar's office will fix all the student's grades for the courses that he has previously studied in his academic record.

## **6.3 TRANSFER TO ANOTHER DEPARTMENT WITHIN THE COLLEGE OF ENGINEERING**

The Conditions to transfer between departments of the College of Engineering are as follows:

1. The student can apply for transfer only after studying at least one semester, excluding the summer semester, in the Department he is transferring from.
2. The student should not have been transferred from another department within the college previously.
3. The procedure for evaluating transfer applications between departments of the College of Engineering is as follows:
4. Fill in the Inter-departmental Transfer Form and submit it to the college dean.

5. Get the recommendation of the head of the Department to be transferred to. The head will do the transfer via Prince Sattam Bin Abdulaziz University's electronic admission system.
6. The academic committee of each Department reviews transcripts of all tentatively accepted transfer students and decides on the equivalency of credits based on an equivalency table of credits approved by the college council.

## 6.4 TRANSFER CREDITS

Students can transfer credit hours that have been studied in other universities. The maximum allowable percentage of credit hours that could be transferred by students from other universities is 60% of the total credit hours in the curriculum. These courses are evaluated by the Department Academic Committee and faculties who teach these courses, and approved by the department chairman. Transferred credits are not included in the GPA and a pass grade is assigned to those courses. Students who want to study courses in other universities must do the following:

1. Fill in a course transfer form and submit it to the chairman of the Department.
2. The chairman consults the course instructor.
3. The course instructor reviews the syllabus of the transfer course in light of the departmental course syllabus and checks the equivalency of the syllabus and credits (the course transferred syllabus should be more than 70% of the course syllabus at Prince Sattam Bin Abdulaziz University and also the grade of the course transferred is more than C).
4. The chairman approves the equivalency and signs the form.
5. The student should then get the approval of the vice dean.
6. The student hands in the form to the university registrar's office and gets an official acceptance letter to study the course at the specified University.

## 7. EVALUATION OF STUDENTS' PERFORMANCE

### 7.1 EXAMINATION AND GRADING CODE

Each course has been designated a total of 100 points. Success in a course is usually based on the combination of grades awarded to course work and the final examination. According to the department council recommendation, the faculty council, which provides the subject, specifies the semester work marks 40% to 60% of the total mark designated for the course. The satisfactory-exemplary level (pass mark) in each course is 60 %.

### 7.2 GRADE CODES

The Grade Codes at Prince Sattam Bin Abdulaziz University are shown in the Table below. A student's Grade Point Average (GPA) is determined by dividing the cumulative point value of all courses attempted by the number of total units in the student's semester schedule. The Table below shows a sample student's report having six subjects at a particular level.

Grade Code	Marks Percentage	Grade weight	Grade in words
A+	95- and above	5.0	Exceptional
A	90- less than 95	4.75	Excellent
B+	85- less than 90	4.5	Superior
B	80- less than 85	4.0	Very Good
C+	75- less than 80	3.5	Above Average
C	70- less than 75	3.0	Good
D+	65- less than 70	2.5	High Pass

D	60- less than 65	2.0	Pass
F	Below 60	1.0	Fail
IP	---	---	IN-Progress
IC	---	---	IN-Complete
DN	---	1.0	Denial
NP	60 and above	---	No Grade- Pass
NF	Below 60	---	No Grade-Fail
W	---	---	Withdrawn
PF	---	---	Separated Disciplinary

The overall cumulative average for the student at graduation time according to his cumulative, average as follows:

1. (Excellent): If the cumulative average is not less than (4.50 out of 5.00).
2. (Very good): If the cumulative average is from 3.75 to less than 4.50 (out of 5.00).
3. (Good): If the cumulative average is from 2.75 to less than 3.75 (out of 5.00).
4. (Pass): If the cumulative average is from 2.00 to less than 2.75 (out of 5.00 ).
5. (Fail): If the cumulative average is less than 2.00 (out of 5.00 ).

### 7.3 EXAMPLE OF THE CALCULATION OF TRIMESTER AND CUMULATIVE GPA

Below is an example of calculating the trimester and the cumulative GPA for two trimesters.

#### • First Trimester

Course	Cr Hrs	Grade	Code	GPA	Quality Points (Product)
1	2	85	B+	4.5	9
2	3	70	C	3	9
3	3	92	A	4.75	14.25
4	4	74	C	3	12
<b>TOTAL</b>	<b>12</b>				<b>44.25</b>

$$\text{First Trimester GPA} = \frac{\text{Total quality points (44.25)}}{\text{Total credits (12)}} = 3.69$$

#### • Second Trimester

Course	Cr Hrs	Grade	Code	GPA	Quality Points (Product)
1	2	85	A+	5	10
2	3	70	B	4	12
3	4	92	C	3	12
4	3	80	B	4	12
<b>TOTAL</b>	<b>12</b>				<b>46</b>

$$\text{Second Trimester GPA} = \frac{\text{Total quality points (46)}}{\text{Total credits (12)}} = 3.83$$

$$\text{Cumulative GPA} = \frac{\text{Total quality points (44.25+46)}}{\text{Total credits (12+12)}} = 3.76$$

## 7.4 PROBATION

According to the regulations of Prince Sattam Bin Abdulaziz University, all students are required to maintain a grade point average of at least 2.00 (grade C) out of 5.00. Those who fail to maintain this average will be placed on scholastic probation and are given two semesters in which they must attain a GPA of 2.00 (grade C). If this condition is not met within the two semesters of probation, the student may then be dismissed from his study program at the College of Engineering. One last opportunity of the third semester to raise the GPA can be given to those who can attain a 2.00 (grade C) GPA if they study 12 credit hours and score at least a B average. If a student fails to attain the minimum GPA of 2.00 (grade C), he will not be granted the sought degree.

## 7.5 EVALUATING METHODS

Student performance in each course is evaluated by the instructor, culminating with the assignment of a grade for this course. The number and types of graded assignments will vary according to what is most appropriate for the course in question. These assignments generally comprise some combination of examinations, quizzes, homework, and/or laboratory reports. Projects and/or oral presentations are required for some courses. The final year projects are graded by a group of faculty members, not only by the supervisor. Therefore, the methods of evaluating student performance are summarized as:

1. **Quizzes:** to assess students' gradual understanding of course subjects.
2. **Case Study Reports:** to assess technical report writing and data collection abilities.
3. **Discussion Groups:** to assess personal interaction and communication skills.
4. **Midterm Exams:** to assess student understanding of course subjects, problem-solving abilities, and analytical and design capabilities.
5. **Final Exam:** to assess the student's overall understanding of the course as well as his analytical and problem-solving capabilities

## 7.6 EXAMINATION POLICY

The examination policy is summarized in the following points:

1. It is expected that all mid-semester examinations will be taken during a regularly scheduled class period of the course.
2. All examinations, excluding the finals, are scheduled by the instructors themselves.
3. Final examinations are required in all classes during the period scheduled at the end of each semester.
4. There should be no deviation from the final exam schedule once it is authorized and announced.
5. The final exam duration should not be less than one hour or more than three hours.



6. No student is to be given more than two exams in one day.
7. Any student who fails to attend the final examination without an acceptable excuse will be given a zero mark in that examination. In that case, the course grade will be calculated on the basis of class work and other test scores earned in the course.
8. When the student completes the course requirements within the specified period, the instructor should assign the appropriate grade on a Change of Grade form and submit it to the Office of Student and Academic Affairs for processing.
9. If the student fails to complete all the requirements in the following semester, the IC status will be changed to an F grade which will be included in the calculation of the cumulative GPA.
10. The grade of IC is not to be awarded in place of a failing grade or when the student is expected to repeat the course.

## **8. GUIDELINES FOR ADVISEE STUDENTS**

A student is highly encouraged to meet with his academic advisor every semester prior to or during the registration week. The goal of this meeting is to review the student's academic progress. In addition, the student can take an appointment to meet individually with his academic advisor to discuss the program of study, career plans, or any problems he may encounter in the study program.

In order to achieve the best outcome of our advising system, students should prepare their study schedules carefully to meet the Department, College and University requirements. An electronic Plan of Study is automatically created by the online registration system based on the student's program curriculum. Plans of study are flexible documents that can be modified according to the guidelines approved by the College and the student's choices and goals. The main purpose of creating a plan of study is to ensure effective student progress and graduation in the minimum duration possible.

Academic advisors are required to monitor online their advisee students' study schedules each semester and ensure that they strictly follow their approved plans of study. Academic advisors provide advice to those students who face difficulty in following their plans of study and need to modify them. Academic advisors are required to submit a report to the Department's Student Advising & Advising Committee at the end of each semester about the progress of their advisee students.

## **9. GUIDELINES GUIDELINES FOR CONDUCT AND ETHICS**

Professional conduct is built upon the idea of mutual respect. Such conduct includes, for example attending the class, arriving on time, minimizing disruptions, focusing on the class and academic honesty. The following sections highlight some of these conducts and ethics.

### **9.1 ATTENDANCE AND ABSENCE**

Attendance at all teaching sessions is compulsory unless you are informed otherwise. According to university regulations, if the combination of justified and non-justified absence in a particular course reaches 25% or more of the total amount of teaching units, the student is automatically awarded the grade "Denied." Not only that, but also there are some ethics that should be followed during class attendance, such as:

- **Arriving on time.** Late arrivals are disruptive to the class and show disrespect to those who are on time.
- **Minimizing disruptions.** Cell phones should be turned off during class. With few exceptions, you should not leave and re-enter the class. You should avoid engaging in side conversations during class.

- **Focusing on the class.** You may take notes on laptops. However, using laptops for activities such as web browsing and answering emails is disruptive both to neighbors and the class.
- **Respect.** You should act respectfully toward all class participants.

## **9.2 STUDENT PROBLEMS**

If you are experiencing difficulty with your work, if you feel that unreasonable demands are being made of you, if you find that there are clashes between coursework deadlines, or if you are being hindered by medical, domestic, personal or other problems, you should consult your advisor (or another member of staff) as soon as possible.

If you cannot find your advisor, or you would prefer to talk to another member of staff, you may do so. In particular, you might want to talk to the Head of Department. The staff at Reception may be able to contact the member of staff you are seeking.

## **9.3 DISABLED STUDENTS**

If you have a disability that might affect your studies, you may be entitled to support. Whether or not a disability has already been declared or develops or becomes apparent during your time at the University, then it is possible to get appropriate support. The University Disability Services can offer a great deal of assistance; but in the first instance, you should consult the Department's Disability Advisor.

## **9.4 HEALTH AND SAFETY**

The University's aim is to provide and maintain a safe working environment, which is without risks to health and offers adequate facilities and arrangements for the welfare of staff and students. It is the duty of all individuals to exercise personal responsibility, to familiarize themselves with Departmental instructions regarding safety procedures, and to do everything possible to prevent injury or damage either to themselves or to others. Information about safety and welfare matters is located on a notice board.

The University also regards harassment as a serious matter. Where serious allegations of harassment are proved by a formal investigation, disciplinary action (including dismissal or expulsion) may be taken against the harasser. In addition to any penalty imposed by the University, those responsible for harassing others may be subject to criminal and/or civil proceedings.

### **9.4.1 Fire and Other Emergencies**

When the fire alarm is heard it is your responsibility to vacate the building quickly (without running) and quietly. Do not re-enter the building until given permission to do so by a fire marshal.

### **9.4.2 General Safety**

You are required to take reasonable care for the health and safety of yourself and others who may be affected by your actions or inactions. Make sure that you familiarize yourself with the following:  
Food and drink must not be consumed in the laboratories. Footwear must be worn at all times.

### **9.4.3 Electrical Safety**

Mains voltages may be present in almost any item of equipment. In particular, computer terminals, oscilloscopes and other cathode ray tube displays will have voltages present in excess of 10 kilovolts. Undergraduates are not permitted to remove the cases of equipment or wire mains plugs or to replace mains connectors or fuses unless directed by a technician or other member of staff. All devices that contain cathode ray tubes should be treated with care; if a tube breaks, there will be a vacuum implosion, which may cause others, as well as yourself, to be blinded.

## **9.5 ACADEMIC MISCONDUCT**

### **9.5.1 Department Statement on Academic Misconduct**

You are responsible for ensuring that your work does not contravene the Department's rules on academic misconduct. The University takes a very serious view of such misconduct and penalties will be applied if you are found to have attempted to mislead examiners. Forms of academic misconduct include:

If you have any queries about what constitutes academic misconduct, and in particular, about the proper attribution of material derived from another's work, you should seek advice from your advisor.

The penalties for academic misconduct will depend on the seriousness of the offense. Students found guilty of academic misconduct may, for example, have their degree class reduced, fail their degree or be asked to leave the University. If you are taking elective courses in another department, check the Academic Misconduct rules in that Department. There may be small but significant differences in the definitions of, for instance, acceptable collaboration in different disciplines.

### **9.5.2 Avoiding Plagiarism and Collusion**

Avoid plagiarism by always acknowledging the sources of the material you have used (including software and information on the web). If you copy a passage of text verbatim, clearly mark the entire extent of the quotation using quotation marks or italic font, and cite its source. Record unpublished work, such as an email or a conversation as 'private communication'. Treat lecture materials as published materials too. When you are collecting material from online sources for an assessment, it is tempting to use "cut and paste". Ideally, you should re-express the source material in your own words, but you should certainly note carefully where the material was taken from so that you can later construct a full citation. In programs submitted for assessment, do not "re-invent the wheel": if you find a piece of code written by someone else that does what you want, use it. However, be sure to include a comment acknowledging its source and making clear that you understand how it works.

### **9.5.3 Guidelines on Mutual Assistance and Collaboration**

If an assessment is completed by students working in pairs, or in groups, you should be given explicit guidance about the level of acceptable collaboration within each pair or group. In some assessments, you may be given explicit encouragement to involve other students in a specific aspect of your work, such as evaluation and testing. Aside from such explicitly permitted exceptions, the following guidelines apply.

While an open assessment is in progress, you may discuss it with your fellow students only to understand the nature of the problems or questions set, not to find out how to solve or answer them. What you submit must be your own work. Do not collaborate when producing the solution or answer to an assessment. Do not copy another student's work, and do not allow another student to copy yours. If in doubt as to whether you may seek or give assistance of some kind, ask the member of staff who set the assessment.

When writing an essay or report for an open assessment, discussion and collaboration are permissible in the initial process of determining the nature and requirements of the question. You will then need to select relevant pieces of information from available sources and evaluate their usefulness and consistency. In this process of selection and evaluation, often involving careful analysis and judgment, you are not permitted to work with others. Nor may you share the details of your own essay or report.

All information used in your essay or report drawn from any source other than your own work and ideas must be explicitly referenced.

When an assessment requires the development of software, discussion and collaboration are again permitted in the initial process of examining and clarifying requirements - though only the setter of the assessment can rule on any perceived ambiguities. The subsequent work of design, implementation and testing should be essential.

## **9.6 DEPARTMENTAL REGULATIONS**

Students follow the academic levels system, which comprises 15 academic levels (Trimesters). The duration of each academic level equals one regular semester, where the student gradually progresses from one academic level to another in accordance with the approved promotion rules. Students are responsible for knowing and following the academic rules and regulations, including the requirements for graduation. Academic advisors assist students in planning their academic programs, but their academic advising activities do not relieve students of this responsibility. Therefore every student should be thoroughly familiar with all the academic regulations and the degree conferral system and remain informed about them throughout his career at the University. A student may seek the assistance of his academic advisor or the department chairman in this respect.

## **10. STUDENT ADMISSIONS TO THE COLLEGE OF ENGINEERING**

In general, students applying to the College of Engineering are centrally admitted by the deanship of admission and registration after completion of the preparatory year of the University. The University council decides the number of admitted students for each upcoming year according to the recommendation of the faculties' councils. Students accepted in the College of Engineering study general courses during the second academic year (the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> levels ). The study in the third and fourth levels is general for all students in the college of engineering and aims to prepare the student for enrolling in different departments.

Then all students admitted in one of the above departments spend three years (nine successive semesters) studying different courses covering various areas such as basic sciences, engineering and general education, as well as summer training and the senior student project before graduation directly.

## **11. DEPARTMENT OF ELECTRICAL ENGINEERING**

### **11.1 INTRODUCTION**

The Department of Electrical Engineering was established at the College of Engineering in Wadi Addawasir in the year 1426 AH, which corresponds to the year 2005 AD, and studies began in the academic year 1430-1431 AH. Electrical engineering is one of the most exciting and challenging fields in engineering. Electrical engineering is one of the most important disciplines in technology-dependent societies. Electrical engineers are leaders in the development of technology because of their ability to effectively apply fundamental concepts while integrating knowledge from multiple disciplines. Many of the products and services used throughout the world today are based on the work of electrical engineers. Fast, safe, and reliable connections between individuals and between countries are some examples of the contribution of electrical engineers to human progress. In addition, there are other fields, such as economics and business administration, that have benefited greatly from electrical engineers and their additions to the principles of communication, data analysis, and system simulation and control.

The electrical engineering observer notes that rapid development poses many challenges to electrical engineers in today's world. Therefore, the bachelor's degree program in electrical engineering at Prince Sattam bin Abdulaziz University has been designed to produce engineers with diverse skills and abilities who are ready for employment and can face the challenges they will encounter in their field of work. The program emphasizes scientific and engineering fundamentals with a high degree of flexibility so that it provides a broad and diverse range of educational experiences that enable students to plan their own educational path according to their career aspirations.

The Electrical Engineering program of the College of Engineering in Wadi Addawasir at Prince Sattam bin Abdulaziz University awards a Bachelor of Science degree with a major in Electrical Engineering. The duration of the program is divided into 15 trimesters, with courses offered in three semesters, as well as some foundation courses in the summer semester. Courses include electronics, communications, signal analysis, power, electrical machines, automatic control and medical engineering, as well as numerous electives.

## 11.2 VISION & MISSION

### Department Vision:

*Preparing Distinct Engineers in modern electrical engineering.*

### Department Mission:

*To offer an electrical engineering program that prepares graduates with the ability to engage in a life-long learning, understand the importance of innovation, maintain sustainable development and appreciate the ethical values of modern electrical engineering*

## 11.3 DEGREE OBTAINED FOR THE GRADUATE

The graduate obtains a **bachelor's degree in engineering** at one of the department specializations.

## 11.4 PROGRAM REQUIREMENT FOR THE B. ENGINEERING DEGREE

The curriculum of the EE program has been developed in line with the educational systems of the Kingdom and the requirements of quality and accreditation recommended by ABET. The program of study for undergraduate students includes some Math and science courses, Engineering topics area courses, and general education and other area courses, as introduced in the Table below.

Department	Math and Science Courses	General Education and other area Courses	Engineering Topics Area Courses	Total
Electrical Engineering	36	63	149	248

## 11.5 MATH AND SCIENCE COURSES

These courses contain 21 credit hours of the Mathematics track and 15 credit hours of the basic Science track. The courses of the Mathematics track and science track are listed in the Table below.

Subdivision Area	Courses Title	Course Code	Prerequisite	Co-Requisite	Cr. Hr.
Mathematics	Differential Calculus	MATH1050	--	--	4

	Integral Calculus	MATH1060	MATH1050	--	4
	Algebra & Analytic Geometry	MATH1070	MATH1060	--	4
	Differential and Integral Calculus	MATH2030	MATH 1060 MATH 1070	--	4
	Differential Equations	MATH2040	MATH2030	--	5
Basic Science	General Chemistry	CHEM1010	--	--	5
	General Physics 1	PHYS1010	--	--	5
	General Physics 2	PHYS1040	PHYS1010	--	5
Total Number of Credit Hours					36

### 11.6 GENERAL EDUCATION AND OTHER AREA COURSES

The curriculum of the departments includes a number of compulsory courses designed to ensure strong background for the students in English language, General Arabic language and Islamic culture, technical drawing, computer programming and engineering economics. The details of the courses under this category are listed in the table below.

Curriculum Area	Course Title	Course Code	Prerequisite	Co-Requisite	Cr. Hr.
General Education & Other	Reading Skills	ENGL1210	--	--	5
	Writing Skills	ENGL1220	--	--	5
	Entrance to Islamic Education	IC101	--	--	2
	Computer Skills	CT1400	--	--	3
	Listening and conservation Skills	ENGL1230	--	--	5
	Arabic Language Skills	ARAB101	--	--	2
	Communication Skills	MC1400	--	--	2
	English for Technical Purposes	ENGL1604	--	--	5
	English for Academic Purposes	ENGL1605	--	--	4
	Introduction to Engineering	GEU1011	--	--	3
	Computer Programming in Engineering	GEU1090	--	--	4
	Islam and Building of Society	IC 102	--	--	2
	Engineering Statistics	GEU3201	MATH1060	--	5
	Arabic Editing	ARAB103	--	--	2

	Engineering Mechanics	GEU2100	MATH1060 MATH1070 PHYS1040	--	5
	Engineering Professional Communications	GEU2610	ENGL1210	--	3
	Economic System in Islam	IC103	--	--	2
	Principles of Political System in Islam	IC104	--	--	2
	Engineering Economy	GEU4010	--	--	3
	Engineering Project Management	GEU4020	--	--	3
Total Number of Credit Hours					63

### 11.7 ENGINEERING TOPICS AREA COURSES

After completing the preparatory year, accepted students of the scientific track will join the college of engineering according to three criteria: their preference, GPA from the PY, and the capacity of the college. This plan allows more choices for the students and better selection for the departments. Students will study some general courses during the second academic year (academic levels 4, 5 and 6) of the University, which gives them a general background basis of different engineering fields and specializations. After completing such general engineering courses, all students admitted to Electrical Engineering Department spend three years (nine successive semesters) studying different courses covering various areas related to the Department. Through these courses, there is an opportunity for the student to choose some of the elective courses in line with his orientation. The Table below lists the Engineering topics area courses.

Curriculum Area	Course Title	Course Code	Prerequisite	Co-Requisite	Cr. Hr.
Engineering Topics	Applied Linear Algebra	EE2440	MATH1060 MATH1070	--	4
	Electric Circuits I	EE2010	MATH1060	--	5
	Computational Methods for Electrical Engineering	EE3561	MATH2040, GEU1090	--	4
	Introduction to Artificial Intelligence	EE3040	EE 2440	--	4
	Electric Circuit II	EE2020	EE2010	--	5
	Electromagnetics I	EE2030	MATH2030 PHYS1040	--	5
	Logic Design	EE2111	GEU1090	--	5

Engineering Drawing and Standards	EE3570	EE2010	EE2020	3
Signals and Systems Analysis	EE3010	EE2020	--	5
Electromechanical Energy Conversion	EE3350	EE2020 EE2030	--	5
Microprocessors and Microcontrollers	EE3540	EE 2111	--	5
Electrical Material	EE3050	EE2020 EE2030	--	3
Electronic Circuits I	EE3121	EE2020	--	5
Fundamental of Power System	EE3400	EE2020	--	5
Communications Principles	EE3200	EE3010	--	5
Practical Training	EE9990	180 Cr. Hr.	--	0
Seminars in Electrical Engineering	EE4010	GEU2610	--	1
Electronic Circuits II	EE 3171	EE 3121	--	5
Automatic Control Systems	EE3511	EE3010	--	5
Electromagnetic II	EE2041	EE2030	--	5
Industrial Instrumentation	EE4190	EE3171	--	4
Electronic Systems	EE4191	EE3171	--	4
Digital Signal Processing	EE3240	EE 3010	--	5
Elective (Electrical Machines)	EE4430	EE3350	--	5
Electrical Engineering Design and Innovation	EE4192	EE3121 EE3540	--	5
Digital Control Systems	EE 4511	EE 3511	--	5
Elective (Optoelectronic Devices and	EE4071	--	--	5



	Systems)				
	Elective (Antennas Theory and Applications)	EE4310	EE 2030 EE 3200	--	5
	Elective (Power Electronics)	EE4420	EE 3171	--	5
	Senior Design Project I	EE4980	213 Cr. Hr.	--	4
	Elective (Digital Communications)	EE4210	EE 3200	--	5
	Elective (Power Systems Analysis)	EE4410	EE 3400	--	5
	Senior Design Project II	EE 4990	EE4980	--	4
Total Number of Credit Hours					149

### 11.7.1 ELECTRICAL ENGINEERING DEPARTMENT REQUIRED ELECTIVE COURSES

The Department of Electrical Engineering offers a number of elective courses (a total of 30 credit hours) covering different electrical engineering areas, such as Electrical power, Machines and Control, Communications, and Electromagnetics and Electronics. The elective courses are listed in the table below.

Elective area courses	Course code	Course Name	Prerequisite	Co- Requisite	Cr. Hr.
	EE4420	Power Electronics	EE 3171	--	5
	EE4430	Electrical Machines	EE 3350	--	5
	EE4410	Power Systems Analysis	EE 3400	--	5
	EE4440	Power System Protection	EE 4410	--	5
	EE 4450	Renewable Energy Systems	EE 4410	--	5
	EE4460	Electric Drives and Control	EE 4430 EE 4420	--	5
	EE4470	Power Distribution Systems	EE 4410	--	5
	EE4480	Power System Operation and Control	EE 4410	--	5
	EE4490	Industrial Electronics	EE 4420	--	5
	EE4432	Power System Planning	EE 4410 GEU3201	--	5
	EE4433	High Voltage Engineering	EE 4410	--	5
	EE4435	Electricity Market and Energy Transactions	EE 4410	--	5
	EE4436	Power System Grounding	EE 4410	--	5
	EE4438	Utilization of Electric Energy	EE 4410 EE 4430	--	5
	EE4434	Power Quality	EE 4410	--	5
Electrical	EE4431	Electrical Machines Dynamics	EE 4430	--	5

power, Machines and Control	EE 4437	Special Machines	EE 4430	--	5
	EE4551	Control System Design and Simulation	EE 4511	--	5
	EE4510	Advanced Control Systems	EE 4511	--	5
	EE4570	Real-time Embedded Systems	EE 4511	--	5
	EE4530	Embedded Control System Design	EE 4511	--	5
	EE4521	Industrial Control Systems	EE 4511	--	5
	EE4561	Mechatronics	EE 4430 EE 4420	--	5
	EE4541	Applications of AI in Power Systems	EE 4410	--	5
	EE4531	Energy Harvesting Circuits and Systems	EE 4450	--	5
	EE4610	Selected Topics in Electrical Machines	EE 4430	--	5
	EE4620	Selected Topics in Power Electronics	EE 4420	--	5
	EE4630	Selected Topics in Electrical Power Systems	EE 4410	--	5
	EE4640	Selected Topics in Renewable Energy	EE 4450	--	5
	EE4650	Selected Topics in Electric Drive Applications	EE 4460	--	5
	EE4660	Selected Topics in High Voltage Engineering	EE 4433	--	5
	EE4670	Selected Topics in Artificial Intelligence	EE 4541	--	5
EE4680	Selected Topics in Control Engineering	EE 4511	--	5	
Communicati	EE4210	Digital Communications	EE 3200	--	5
	EE 4310	Antennas Theory and Applications	EE 2030 EE 3200	--	5
	EE4320	Microwave Engineering	EE 2030 EE 2041	--	5
	EE4260	Wireless Communications	EE 4210 EE 2030	--	5
	EE4271	Optical Fiber Communications	EE 4210 EE 2030	--	5
	EE4220	Communications Systems	EE 4310 EE 2030	--	5
	EE4230	Wave Propagation and Antennas	EE 4310 EE 4260	--	5
	EE4240	Communications Networks	EE 4310 EE 3240	--	5
	EE4110	Introduction to Biomedical Engineering	EE 3121	--	5
	EE4250	Coding Theory and Applications	EE 4210	--	5
	EE4120	Digital Image Processing	EE 3240	--	5
	EE4270	Error Correcting Coding for Communication	EE 4210	--	5

ons, Electromagn etics and Electronics		Systems			
	EE4280	Information Theory	EE 4210	--	5
	EE4330	Introduction to Cybersecurity	EE 3040	--	5
	EE4130	Real-Time Signal Processing Systems	EE 3240	--	5
	EE4290	Satellite Communications	EE 4210	--	5
	EE4151	Communication Electronics	EE 3171	--	5
	EE4160	Microwave Circuits and Devices	EE 3171	--	5
	EE4170	Optoelectronic Devices and Systems		--	5
	EE4180	Low Power VLSI Design	EE 3171	--	5
	EE4390	Advanced Robotics	EE 4511 EE 3240	--	5
	EE4190	3D Imaging	EE 3240	--	5
	EE4380	Computing Systems for Engineering	EE 3561	--	5
	EE4382	Emerging Technologies in Electrical Engineering Applications	EE 3240	--	5
	EE4384	Electrical Engineering in Sustainability	EE 3240	--	5
	EE4386	Financial Engineering	EE 3240	--	5
	EE4388	Object-Oriented Modelling and Design	EE 3561	--	5
	EE4332	Virtual and Augmented Reality	EE 3240	--	5
	EE4334	Engineering Entrepreneurship	EE 3240	--	5
	EE4340	Selected Topics in Communications	EE 4210	--	5
	EE4350	Selected Topics in Engineering Electromagnetics	EE 4320	--	5
EE4360	Selected Topics in Electronics	EE 4170	--	5	
EE4370	Selected Topics in Signal Processing	EE 3240	--	5	

## 11.8 STUDY PLANS

As illustrated earlier, a study in the first three levels is general for all students in the University and aims to prepare the student for enrolling in different faculties. Moreover, accepted students join the College of Engineering to study some general courses during the second academic year (academic levels 4, 5 and 6) of the University, which gives them a general background basis of different engineering fields and specializations. After completing such general engineering courses, all students admitted to a specific department spend three years (nine successive semesters) studying different courses covering various areas related to the Department. The following sections will point to the detailed study plans for all academic levels, including general levels and specific levels.

➤ **First level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T Hr
					Pre	Co	
1	ENGL1210	Reading Skills	5	(2,3,0)			
2	ENGL1220	Writing Skills	5	(2,3,0)			
3	MATH1050	Differential Calculus	4	(2,2,0)			
4	IC101	Entrance to Islamic Education	2	(2,0,0)			
<b>Total</b>			<b>16</b>	<b>(8,8,0)</b>			<b>16</b>

➤ **Second level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	MATH1060	Integral Calculus	4	(2,2,0)	MATH1050		
2	CT1400	Computer Skills	3	(2,0,1)			
3	ENGL1230	Listening and conservation Skills	5	(2,3,0)			
4	ARAB101	Arabic Language Skills	2	(2,0,0)			
<b>Total</b>			<b>14</b>	<b>(8,5,1)</b>			<b>14</b>

➤ **Third level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	MC1400	Communication Skills	2	(2,0,0)			
2	ENGL1604	English for Technical Purposes	5	(4,0,1)			
3	PHYS1010	General Physics I	5	(3,1,1)			
4	ENGL1605	English for Academic Purposes	4	(2,2,0)			
<b>Total</b>			<b>16</b>	<b>(11,3,2)</b>			<b>16</b>

➤ **Fourth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	GEU1011	Introduction to Engineering	3	(3,1,0)			
2	GEU1090	Computer Programming in Engineering	4	(3,0,3)			
3	CHEM1010	General Chemistry I	5	(4,1,3)			
4	MATH1070	Algebra and Analytical Geometry	4	(4,1,0)	MATH1060		
5	IC 102	Islam and Building of Society	2	(2,0,0)			
<b>Total</b>			<b>18</b>	<b>(16,4,6)</b>			<b>26</b>

➤ **Fifth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	GEU3201	Engineering Statistics	5	(5,1,0)	MATH1060		
2	MATH2030	Differential and Integral Calculus	4	(4,1,0)	MATH1060 MATH1070		
3	PHYS1040	General Physics II	5	(4,1,3)	PHYS1010		
4	ARAB103	Arabic Editing	2	(2,0,0)			
<b>Total</b>			<b>16</b>	<b>(15,3,3)</b>			<b>21</b>

➤ **Sixth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	GEU2100	Engineering Mechanics	5	(5,1,0)	MATH1060 MATH1070 PHYS1040		
2	GEU2610	Engineering Professional Communications	3	(2,0,3)	ENGL1210		
3	MATH2040	Differential Equations	5	(5,1,0)	MATH2030		
4	EE 2440	Applied Linear Algebra	4	(4,1,0)	MATH1060 MATH1070		
<b>Total</b>			<b>17</b>	<b>(16,3,3)</b>			<b>22</b>

➤ **Seventh level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	IC 103	Economic System in Islam	2	(2,0,0)			
2	IC 104	Principles of Political System in Islam	2	(2,0,0)			
3	EE 2010	Electric Circuits I	5	(4,1,3)	MATH1060		
4	EE 3561	Computational Methods for Elec. Eng.	4	(3,1,3)	MATH2040 GEU1090		
5	EE 3040	Introduction to Artificial Intelligence	4	(4,1,0)	EE 2440		
<b>Total</b>			<b>17</b>	<b>(15,3,6)</b>			<b>24</b>

➤ **Eighth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	EE 2020	Electric Circuit II	5	(4,1,3)	EE 2010		
2	EE 2030	Electromagnetic I	5	(5,1,0)	MATH2030 PHYS1040		
3	EE 2111	Logic Design	5	(4,1,3)	GEU1090		
4	EE3570	Engineering Drawing and Standards	3	(3,1,0)	EE 2010	EE2020	
<b>Total</b>			<b>18</b>	<b>(16,4,6)</b>			<b>26</b>

➤ **Ninth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	EE 3010	Signals and Systems Analysis	5	(5,1,0)	EE 2020		
2	EE 3350	Electromechanical Energy Conversion	5	(4,1,3)	EE 2020 EE 2030		
3	EE 3540	Microprocessors and Microcontrollers	5	(4,1,3)	EE 2111		
4	EE 3050	Electrical Material	3	(3,1,0)	EE 2020 EE 2030		
<b>Total</b>			<b>18</b>	<b>(16,4,6)</b>			<b>26</b>

➤ **Tenth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	EE 3121	Electronic Circuits I	5	(4,1,3)	EE 2020		
2	EE 3400	Fundamentals of Power System	5	(4,1,3)	EE 2020		
3	EE 3200	Communications Principles	5	(4,1,3)	EE 3010		
4	EE 9990	Practical Training (8 weeks)	0		180 Cr. Hr.		
<b>Total</b>			<b>15</b>	<b>(12,3,9)</b>			<b>24</b>

➤ **Eleventh level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	EE 4010	Seminars in Electrical Engineering	1	(0,0,3)	GEU2610		
2	EE 3171	Electronic Circuits II	5	(4,1,3)	EE 3121		
3	EE 3511	Automatic Control Systems	5	(5,1,0)	EE 3010		
4	EE 2040	Electromagnetic II	5	(5,1,0)	EE 2030		
<b>Total</b>			<b>16</b>	<b>(14,3,6)</b>			<b>23</b>

➤ **Twelfth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	EE 4190	Industrial Instrumentation	4	(3,1,3)	EE 3171		
2	EE 4191	Electronic Systems	4	(4,1,0)	EE 3171		
3	EE 3240	Digital Signal Processing	5	(5,1,0)	EE 3010		
4	EE xxxx	Elective Course	5	(4,1,3)			
<b>Total</b>			<b>18</b>	<b>(16,4,6)</b>			<b>23</b>

➤ **Thirteenth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	EE 4192	Electrical Engineering Design and Innovation	5	(4,1,3)	EE 3121 EE 3540		
2	EE 4511	Digital Control Systems	5	(4,1,3)	EE 3511		
3	EE xxxx	Elective Course	5	(5,1,0)			
4	GEU 4010	Engineering Economy	3	(3,1,0)			
<b>Total</b>			<b>18</b>	<b>(16,4,6)</b>			<b>26</b>

➤ **Fourteenth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	GEU 4020	Engineering Project Management	3	(3,1,0)			
2	EE xxxx	Elective Course	5	(4,1,3)			
3	EE xxxx	Elective Course	5	(5,1,0)			
4	EE4980	Senior Design Project I	4	(3,0,3)	213 Cr. Hr.		
<b>Total</b>			<b>17</b>	<b>(15,3,6)</b>			<b>24</b>

➤ **Fifteenth level:-**

#	Course Code	Title	Credits	Contact Hours	Requisites		T
					Pre	Co	
1	EE xxxx	Elective Course	5	(4,1,3)			
2	EE xxxx	Elective Course	5	(5,1,0)			
3	EE 4990	Senior Design Project II	4	(3,0,3)	EE4980		
<b>Total</b>			<b>14</b>	<b>(12,2,6)</b>			<b>20</b>



### 11.8.1 COURSES PREREQUISITE AND CO-REQUISITE

The courses at each level and their prerequisite and co-requisite are illustrated in Figure 1. While for Elective courses, the prerequisites are shown in Figure 2.

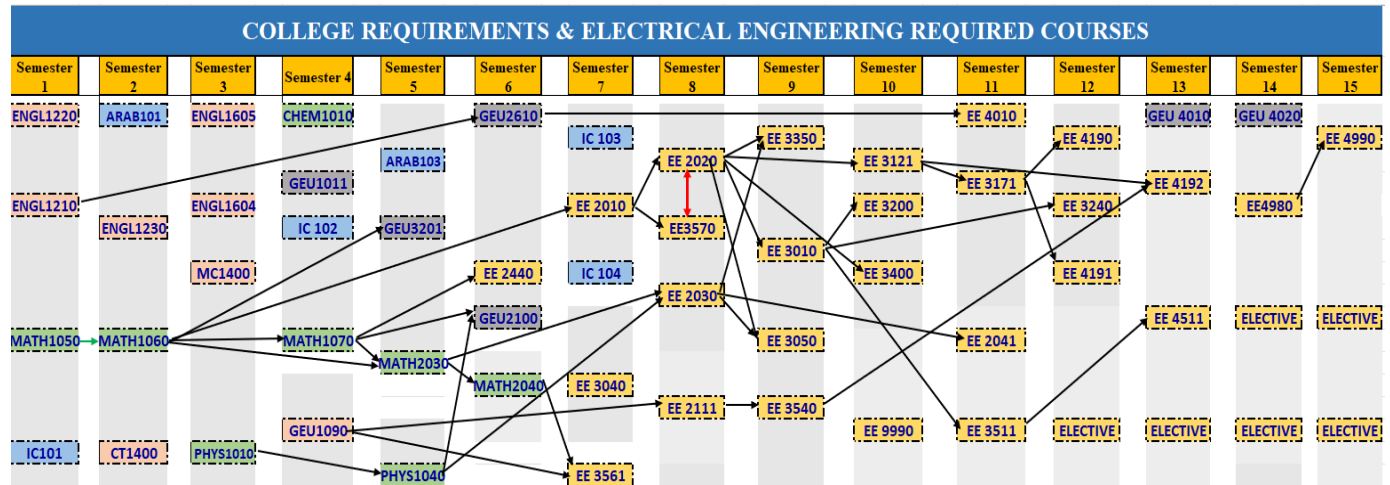
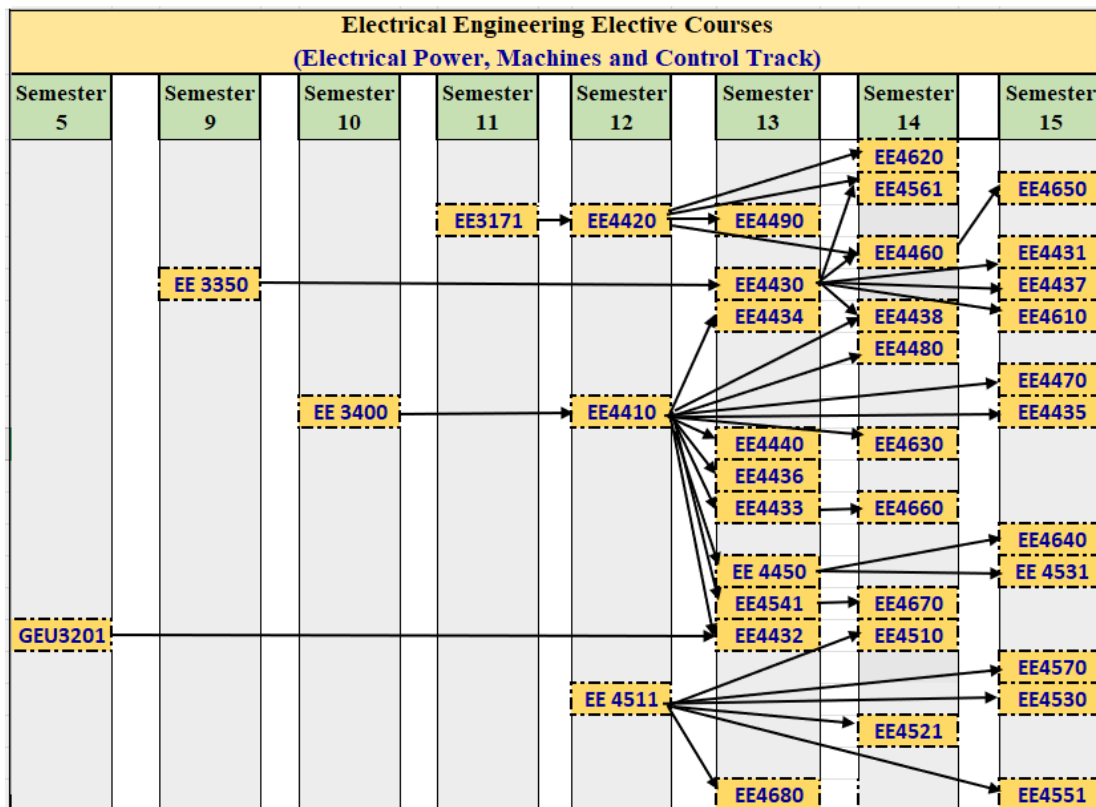


Figure 1. Prerequisite and co-requisite structure of the program's courses



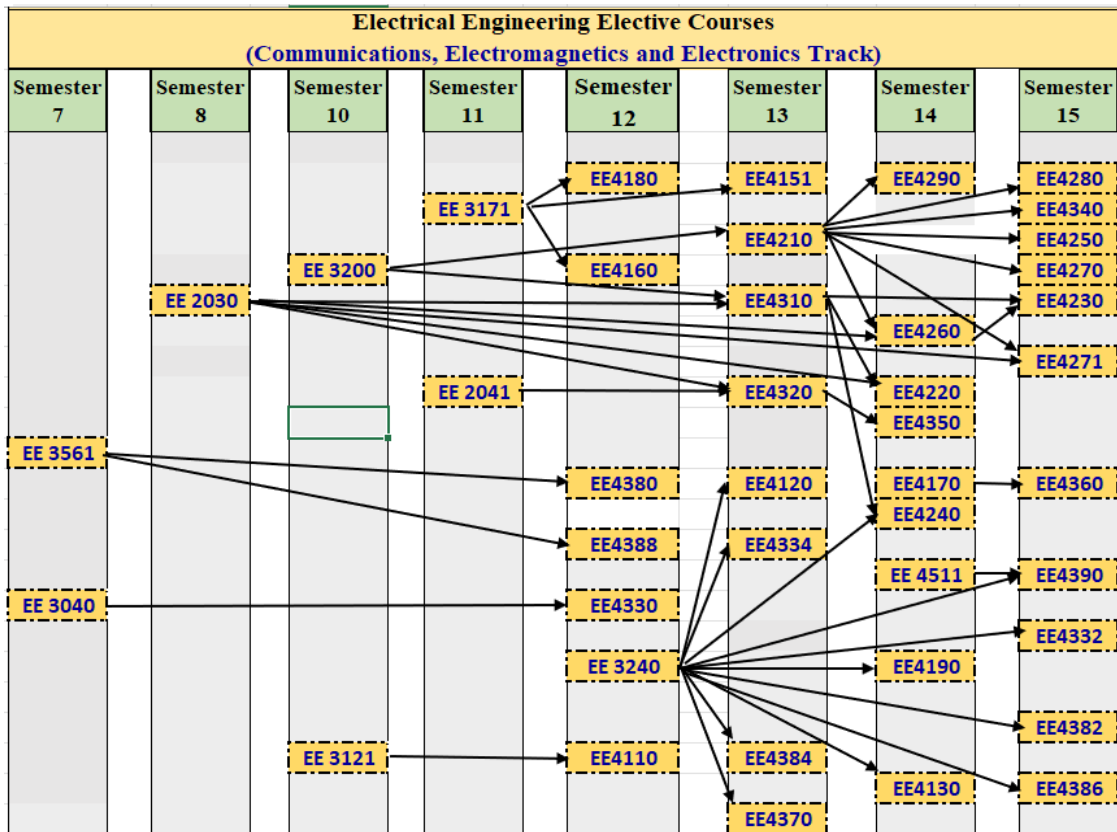


Figure 2. Prerequisite structure of the EE program's elective courses

### 11.9 LABAROTERIS

The Department of electrical engineering has eleven laboratories covering different knowledge areas of the electrical engineering discipline. The laboratories are The Electrical Circuit Lab, Measurement Lab, Microprocessor Lab, Electronics Lab, Computer and Multimedia Lab, Electric Machine Lab, Control Systems Lab, Logic Design Lab, Electric Power Lab, Power Electronics Lab, and Communications Lab.



**Electrical Circuit Lab**



**Measurements Lab**



**Microprocessor Lab**

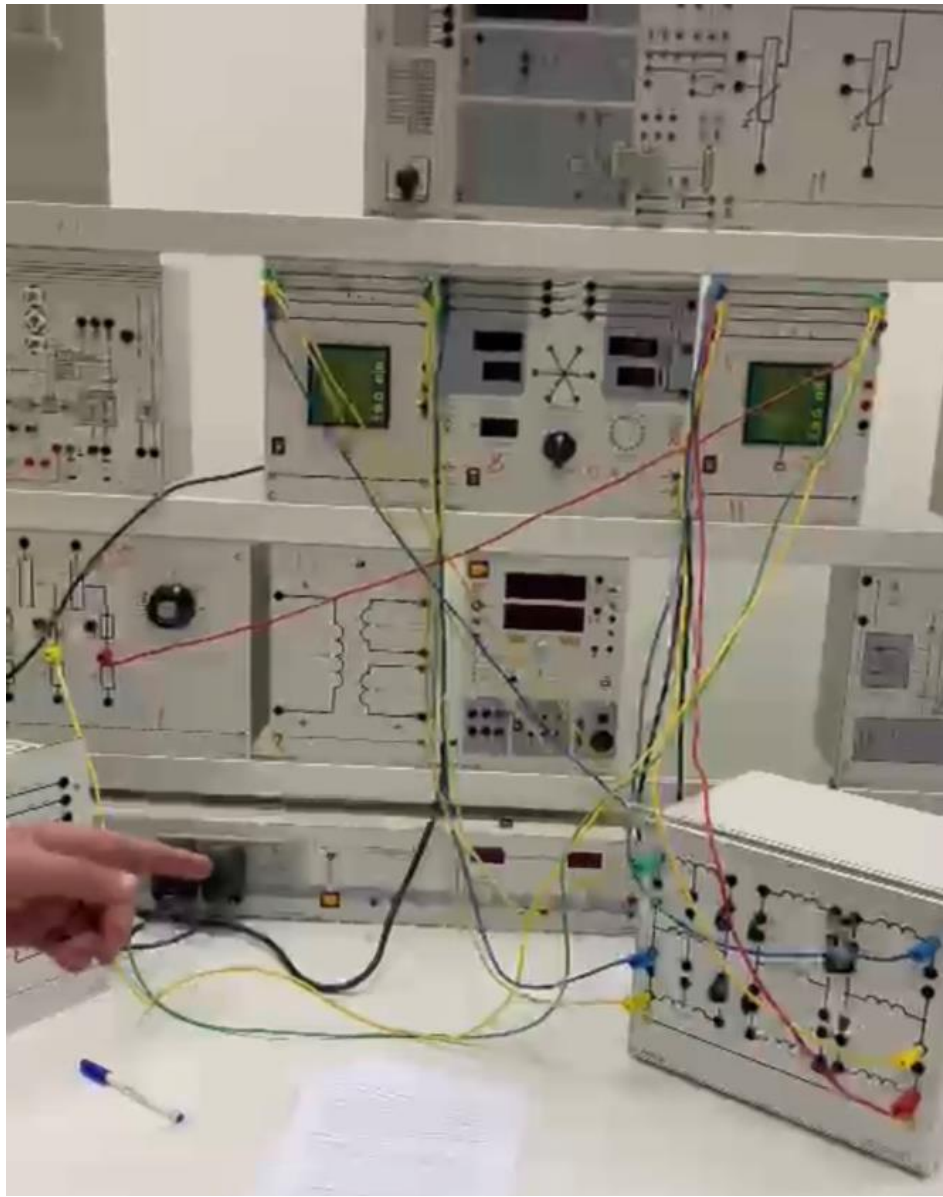


**Electronics Lab**





**Computer and Multimedia Lab**



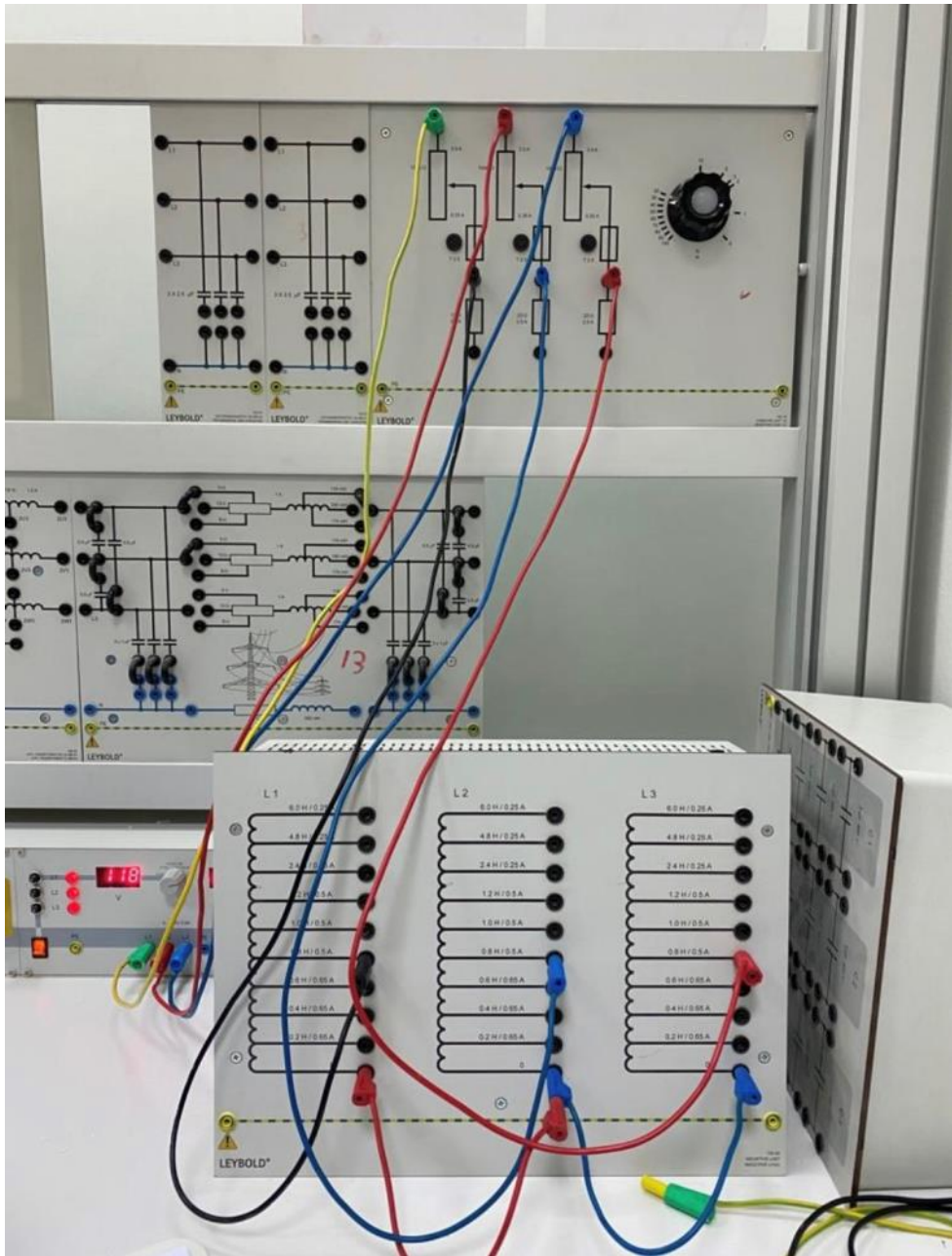
**Electrical Machines Lab**



**Control Systems Lab**



**Logic Design Lab**



**Electrical Power Lab**





**Power Electronics Lab**



**Communications Lab**

## 12. LINKS AND QR CODES

### Item

### Link and QR code

**Student Handbook**

<https://dpy.psau.edu.sa/ar/node/6996>



**The Study and Tests Regulations**

[psau.edu.sa](https://psau.edu.sa)) لائحة الدراسة والاختبارات للمرحلة الجامعية



**Technical Guidelines**

[psau.edu.sa](https://psau.edu.sa)) إرشادات تقنية للطلاب



**Student's Academic Advisor Handbook**

<https://dar.psau.edu.sa/sites/uploads/dar/page/2021-11/1.pdf>



**Student Portal User Guide**

<https://dar.psau.edu.sa/ar/node/7022>



**Study Plan**

[https://engw.psau.edu.sa/sites/uploads/engw/page/2022-09/ElectricalEngineering\\_NEW\\_StudyPlan.pdf](https://engw.psau.edu.sa/sites/uploads/engw/page/2022-09/ElectricalEngineering_NEW_StudyPlan.pdf)



**Graduation Project Handbook**

<https://engw.psau.edu.sa/en/page/SeniorDesignProjects>



**Training Field Handbook**

<https://engw.psau.edu.sa/en/page/SummerTraining>



