



**Self-Assessment Report**  
**Electrical Engineering Department**  
**College of Engineering-University of Basra**  
**Basra, Iraq**

**2010-2011**



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### **BACKGROUND INFORMATION**

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## **About the Department of Electrical Engineering:**

The electrical engineering department was established in 1964 with the establishment of the College of Engineering at the University of Basra, where it was necessary to establish a department to meet the emerging need for skilled electrical engineers and to keep abreast of the scientific and technical progress in the world.

Since its inauguration, electrical engineering department adopted a well academic program equal to the electrical engineering departments worldwide by focusing on both theoretical and practical integrated aspects of the electrical engineering fields of study.

The undergraduate study at the department is four years in length; from the moment of receiving the freshman year students whose average grades qualify them to join it up till to the graduation of the senior year students where they get their Bachelor of Science degree in electrical engineering.

The electrical engineering departments constitutes of:

1. The chairman of the department who manages the department's academic and administrative affairs, the chairman administrative support staff (chairman's reservist, assistant, and secretary).
2. The department panel which includes all of the faculty members of the department (44 members) whose names, ranks and their specialties are mentioned in criterion 6.
3. The department also has engineers, technicians, and administrators employees.
4. The department also has several committees:-
  - Scientific and Graduate Affairs Committee
  - Examination Committee
  - Importation Committee
  - Inventory Committee
  - Gratis Books Committee
  - Summer Industrial Training Committee
  - Laboratories Maintenance Committee
  - Quality Assurance Committee

Three factors affect the success of the department:

- The chairman of the department and his active wise administration.
- The curricula that are taught to students.
- The employed faculty members, technicians, and other staff members.

The chairman of the department assigns the duties and jobs of every member in the department:

If the member is a faculty, then s/he will be fully responsible of her/his assigned curriculum and laboratories.

If the member is an administrative staff, s/he does what her/his work needs and gets back to the chairman with any questions and consultation.

Any crucial decisions at the department must be made by the department board which contains all the faculty members.



Students' daily issues are the responsibility of the chairman assistant.

The process of teaching in the department starts with assigning a faculty member to teach a specific curriculum; the faculty member is also given the syllabus and the textbook of the curriculum which he should use in teaching, but he has the ability to use other references. Since he will be fully responsible of teaching the curriculum to students, he must afford the examination committee with:

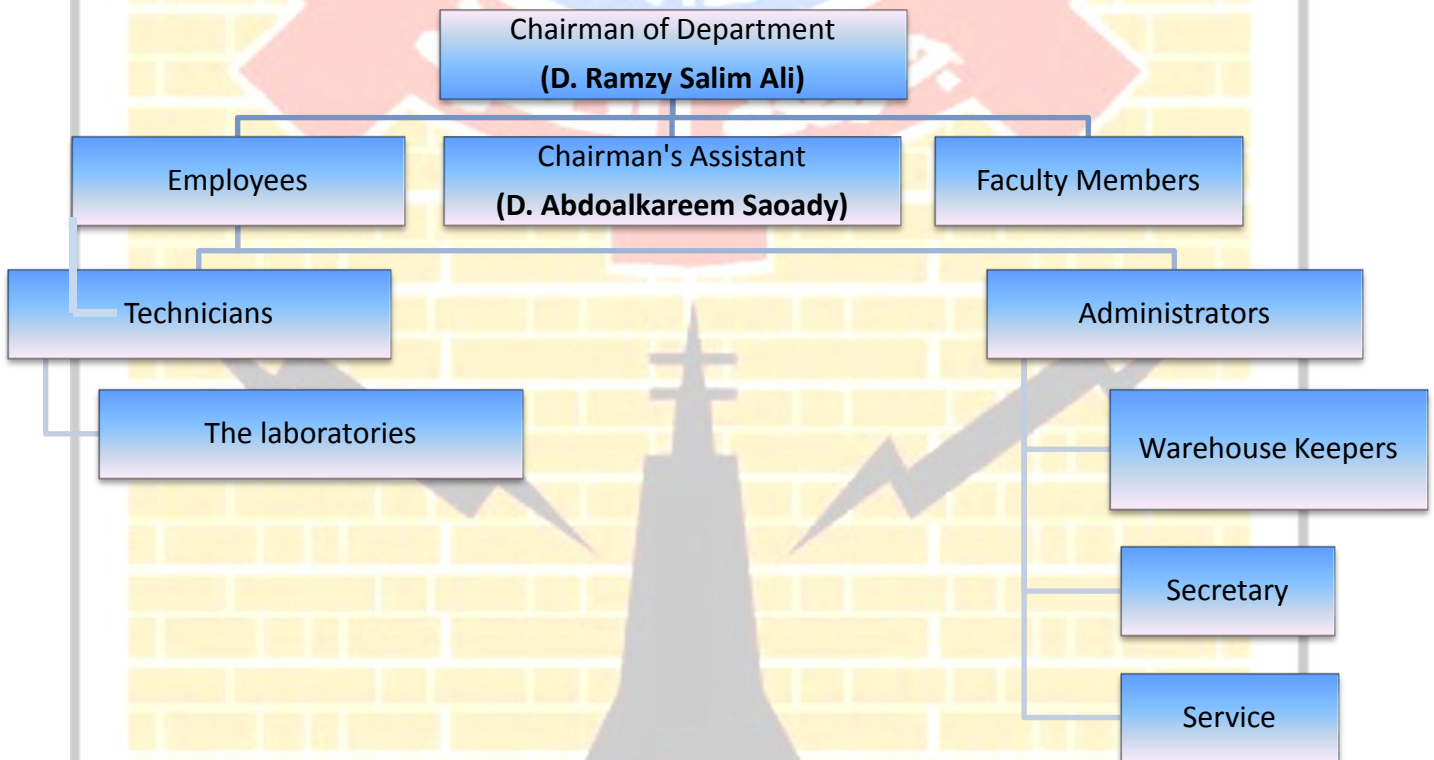
- 1<sup>st</sup> semester examination's questions and marks.
- 2<sup>nd</sup> semester examination's questions and marks.
- Final examination set questions and marks.

In doing researches, often each faculty member is working alone on his own research.

Currently, the only way to contact the department is via coming personally to the department. This can be improved if the department puts a website with official emails for its employees rather than their personal ones.

### Department structure:

Figure below shows the overall structure of the department:-



**Fig.1: Department Structure**



## Criterion1: Students

### 1.1 Admission Process and Enrollment

Students are admissible to the college of engineering according to a central admission process called (grades comparison) managed by the Iraqi Ministry of Higher Education and Scientific Research / Studies, Planning, and Prosecution Office / Central Admission Department. The accepted students are coming from:

1. High school graduates (scientific disciplines only).
2. Institutions graduates (only who are in top 25% rank).
3. Industrial technical secondary schools (only who are in top 5% rank).
4. Distinguished employees in governmental offices who are originally institutions graduates.

After the names of the accepted students are announced, the registration committee which contains at least ten members including the dean's assistant has only ten days to meet the accepted students and to register them at the college. They are distributed again according to their high school grades on the eight departments in the college (petroleum engineering, architecture engineering, computer engineering, civil engineering, electrical engineering, chemical engineering, mechanical engineering, and materials engineering).

**Table1.1** shows the enrolled students in the department for the last five years.

**Table 1-1** Records of Admissions Standards applied over the past 5 years

Academic Year	Percentile Rank in Secondary School	Number of New Students Enrolled
	% MIN	
2010-2011	86	89
2009-2010	85	100
2008-2009	85	74
2007-2008	80	100
2006-2007	80	90

### 1.2 Evaluating Students' Performance

The students are informed about the exams requirements at the beginning of every new academic year.

The students of college of engineering are evaluated using the following means:

1. Daily, monthly, semester, and final exams.
2. Their laboratories reports.
3. Assignments.
4. Senior year project.



5. Summer industrial training reports.

### **1.3 Advising and Guidance**

The mechanism of academic guidance and educational advising in the previous years was based on the allocation of one faculty member as a supervisor for each class. This mechanism proved to be ineffective because of the inability of one faculty member to follow the large number of students in his responsibility.

Starting from this year 2011-2012, the department and the college has the intention to apply a new scheme of advising with the following steps:

1. In each department, an advising and guidance committee is formed to be responsible of arranging the work of the advisors, delivering its reports to the chairman of the department, and its recommendations of solving any problems that may face both the advisors and the students.
2. The chairman of the department distributes the students on the selected faculty members (advisors) such as each advisor is assigned a number of advisees. Each month the advisor meets her/his assigned advisees according to a pre-scheduled appointments.
3. Each advisor delivers her/his monthly report to the advising and supervision committee which in turn sends it to the chairman.
4. These appointments can be classified as:
  - a. Evaluation meeting: assess the student's readiness and abilities and accordingly determine the best advising approach to follow.
  - b. Diagnostic meeting: usually is used to make tests and answering questions to reach an accurate diagnosis in order to lay out the work plan of advising.

Guidance/treatment meeting: where the treatment is applied according to the plan set in the previous meeting. This treatment depends a lot on the skills and abilities of the advisor

### **1.4 Graduation Requirements**

In the Electrical Engineering department, the student has to complete 158 credit hours in order to get his Bachelor of Science degree; these credit hours are divided through the four years of study as:

1. 124 credits (78.5%) are of Electrical Engineering courses requirements.
2. 20 credits (12.7%) are of College courses requirements.
3. 14 credits (8.8%) are of university courses requirements.

### **1.5 Transfer Students**

Each year, the Iraqi Ministry of Higher Education and Scientific Research issues the regulations of transferring succeeded students from/to all colleges and universities in Iraq. It also issues the nomination's modifications for the deferred and failed students. The college of engineering carries out the ministry instructions using a form given by the ministry plus other needed



documents. The Students Affairs Department at the University of Basra keeps following the transferring process that happens during summer holidays, i.e., July – August.

Each transferred student undergoes what is called the scientific reprise executed by the department if the curriculum and credit hours of the two colleges are similar in more than 80%. Table1.2 shows the numbers of the transferred students from the department over the past five years.

**Table 1-2** The number of students transferred during the last five years

Academic Year	Number of Transfer Students Enrolled
2010-2011	٣٥
2009-2010	٢١
2008-2009	١١
2007-2008	٤١
2006-2007	٣٧

## 1.6 Enrolment and Graduation

**Table1.3** shows the records, over the past five academic years, of the total number of full time students enrolled in the program and the corresponding number of graduates each year.

**Table 1-3** Total Enrolled and Graduates trends for past five academic years

	Year 2006-2007	Year 2007-2008	Year 2008-2009	Year 2009-2010	Year 2010-2011
Enrolled students	65	70	74	100	89
Graduates	69	69	72	57	32

Fig.1.1 is a chart representation of the data tabulated in Table1.3 also it includes the number of the new students accepted in the department in each year.

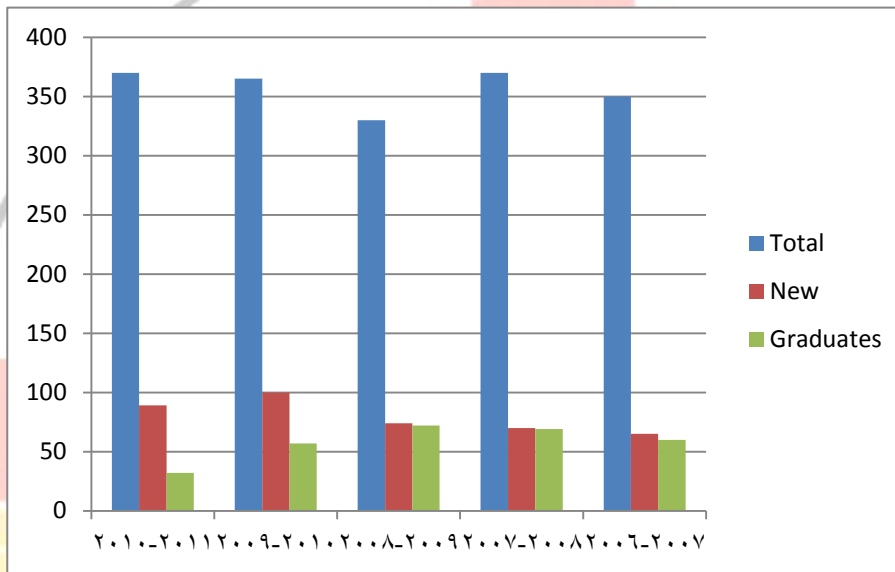


Fig.1.1: Number of: students, new students and graduates

### 1.7 SWOT Analysis:-

The following table shows the SWOT analysis for this criterion:-

		Helpful (to achieving the objective)	Harmful (to achieving the objective)
Internal origin (attributes of the department)	<b>Strengths</b>	<ul style="list-style-type: none"> <li>- The admission laws used by the ministry of higher education scientific research allow the department to get students of good quality.</li> <li>- Variety of means are used to evaluate the students of department.</li> </ul>	<ul style="list-style-type: none"> <li>- The capacity of department is less than the number of student.</li> <li>- There is no feedback system from employers of the graduates to get indication about their quality.</li> </ul>
	<b>Opportunities</b>	<ul style="list-style-type: none"> <li>- The adopted advising and guidance system will help the department in diagnosing the students' performance.</li> </ul>	<ul style="list-style-type: none"> <li>- There are no real jobs environments for the graduates which help in refining their knowledge and personality.</li> </ul>
External origin (attributes of the environment)			





## CRITERION ٢: PROGRAM EDUCATIONAL OBJECTIVES

### 2.1 Vision of the Department

The Department of Electrical Engineering aims to be distinct locally, regionally and globally as a department offers leading engineering programs and high quality services.

### 2.2 Mission of the Department

The Department of Electrical Engineering seeks to meet the needs of the Iraqi society and the region for skilled electrical engineers by providing high quality programs in education, research and community service.

### 2.3 Strategic Objectives of the College

The Strategic Objectives of the Engineering College in university of Basra are given by the following five points:-

**Table2.1: College Educational Objectives**

<b>CEO1</b>	Prepare globally competent and socially responsible graduates who are specialists in engineering sciences and their applications by providing quality education.
<b>CEO2</b>	Encourage and support the higher degree graduate studies (master and doctorate) in all college departments.
<b>CEO3</b>	Foster research and scholarly endeavors that advance knowledge and help in solving the industrial and social problems.
<b>CEO4</b>	Contribute to the welfare of the country by establishing effective partnerships that can add value and contribute to college programs.
<b>CEO5</b>	Create an enriching supportive working environment for the college community to ensure the achievements of the college objectives.

### 2.4 Strategic Objectives of the Department

The Program Educational Objectives (PEOs) clearly reflect the professional expectations from the graduates of the electrical engineering department and prepare them to meet that challenge. Table2.2 shows the objectives of the electrical engineering department.

**Table2.2: Program Education Objectives**

<b>PEO1</b>	To provide students with understanding of the fundamental knowledge and skills to be able to design, run and test the electrical systems and solve the problem encountered in their fields.
<b>PEO2</b>	To provide students with the ability to work in different work environment through communication skills as members or leaders in multi-disciplinary teams.
<b>PEO3</b>	The student should be able to integrate academic knowledge with field practice for the development of the engineering profession in the context of social values and professional ethics.
<b>PEO4</b>	The student should be able to continue to develop his knowledge and skills for lifelong and take advantage of any new in the area of their fields.



PEO5	Refine the student's personality through extra-curricular activities and creating an environment conducive to creativity and innovation
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### **2.5 Consistency of the Program Educational Objectives with the Mission of the College**

The electrical department seeks to harmonize the educational objectives with the strategic objectives of the engineering College.

The following table shows the Mapping between the objectives of the college and the department objectives.

**Table 2.3: Mapping between the PEOs and the objectives of the College**

	PEOs	PEO – 1	PEO – 2	PEO – 3	PEO – 4	PEO – 5
College objectives	P – 1	√	√	√	√	√
	P – 2	√	√	√		
	P – 3				√	√
	P – 4			√		√
	P – 5					√

### **2.6 Process for Establishing and Revising Program Outcomes**

The main objective of the program outcomes, POs, and program Educational Objectives, PEOs, is to measure the level of achievement of the curricular requirement of the department in preparing the graduates to meet the challenges presented to them by the fascinating electrical engineering industry. In other words, electrical engineering Program outcomes, POs, and Program Educational Objectives, PEOs, are two different, but interrelated mechanisms that were developed in order to measure the level of achievement and success of the program.

### **2.7 Program Outcomes**

For the purpose of achieving its objectives, the electrical engineering department has developed eleven Program Outcomes (POs) as an initial set of POs. These outcomes are, in effect, what the students expected to know and achieve post graduation. Table3.1 shows these program outcomes.



Table2.4: Electrical Engineering Program Outcomes

<b>Outcomes</b>	<b>Code</b>
<b>PO1 : an ability to apply knowledge of mathematics, science, and engineering fundamentals.</b>	<b>a</b>
<b>PO2 : an ability to outline and conduct experiments as well as analyze and interpret data.</b>	<b>b</b>
<b>PO3 : an ability to design an integrated system and its various components and processes, within realistic economic, environment, social, political, ethical, health and safety, manufacturability, and sustainability constraints.</b>	<b>c</b>
<b>PO4 : an ability to function on multi-disciplinary teams to analyze and solve problems.</b>	<b>d</b>
<b>PO5 : an ability to identify, evaluate and solve engineering problems.</b>	<b>e</b>
<b>PO6 : an understanding of the responsibility of engineers to practice in professional and ethical manner at all times.</b>	<b>f</b>
<b>PO7 : an ability to communicate effectively using oral, written, and graphic forms.</b>	<b>g</b>
<b>PO8 : the broad education necessary to understand the potential impact of engineering solutions on society and the environment.</b>	<b>h</b>
<b>PO9 : an understanding of the need for up-to-date engineering tools and other knowledge acquired through life-long learning.</b>	<b>i</b>
<b>PO10 : knowledge of contemporary issues related to engineering.</b>	<b>j</b>
<b>PO11 : an ability to use modern engineering tools, skills and design techniques necessary for the practice of engineering.</b>	



### 2.8 Relationship of Program Outcomes to Program Educational Objectives

As it is needless to say, the Outcomes of the program should be fully achieved its objectives. The following table illustrates the ability of the Outcomes to achieve the objectives of the department:

**Table 2.5 Mapping of Program Outcomes to Program Educational Objectives**

POs	PEOs				
	PEO - 1	PEO - 2	PEO - 3	PEO - 4	PEO - 5
PO - a	√				
PO - b	√				
PO - c	√				
PO - d		√			√
PO - e	√				
PO - f			√		√
PO - g		√			√
PO - h			√		√
PO - i				√	
PO - j				√	
PO - k				√	



## 2.9 SWOT Analysis:-

The SWOT analysis for this criterion is shown below:

		Helpful (to achieving the objective)	Harmful (to achieving the objective)	
Internal origin (attributes of the department)	Strengths	<ul style="list-style-type: none"><li>- The strategic objectives of the department are consistent with those of college.</li><li>- The POs of the department are fully accomplishing its PEOs.</li></ul>	<b>Weaknesses</b> <ul style="list-style-type: none"><li>- The current adopted system to measure the achievement of the POs is not satisfactory and need to be enhanced.</li></ul>	
	External origin (attributes of the environment)	Opportunities	<ul style="list-style-type: none"><li>- By continuously updating the PEO and PO, all the present threats would be vanished.</li></ul>	Threats





## Criterion3: Curriculum

### 3.1 Course description

The curriculum in the Department of Electrical Engineering consists from Thirty-four courses distributed on an annual four years and forming a total of 158 units, as shown by the following tables: -

#### First year

Code	Subject	Hours/Week						Units
		First Term			Second Term			
		Th.	Prac.	Tut.	Th.	Prac.	Tut.	
EEE101	Fundamentals of Democracy	2	-	-	2	-	-	4
EEE102	Digital Techniques	2	1	-	2	1	-	5
EEE103	Engineering Drawing	-	3	-	-	3	-	2
EEE104	Computer Science	2	2	-	2	2	-	6
EEE105	Principle of Mechanical Eng.	2	1	1	2	1	1	5
EEE106	Mathematics (I)	3	-	1	3	-	1	6
EEE107	Electronics (I)	2	-	1	2	0	1	4
EEE108	Basics of Electrical Eng.	3	-	1	3	-	1	6
EEE109	Laboratories	-	3	-	-	3	-	2
<b>Total</b>		<b>16</b>	<b>10</b>	<b>4</b>	<b>16</b>	<b>10</b>	<b>4</b>	<b>40</b>



### Second year

Code	Subject	Hours/Week						Units
		First Term			Second Term			
		Th.	Prac.	Tut.	Th.	Prac.	Tut.	
EEE201	Fundamentals of Freedom	2	-	-	2	-	-	4
EEE202	Mathematics (II)	3	-	1	3	-	1	6
EEE203	Computer Programming	2	2	-	2	2	-	6
EEE204	Electronics (II)	2	-	1	2	-	1	4
EEE205	Electrical Circuits	2	-	1	2	-	1	4
EEE206	Electrical Machines (I)	2	-	1	2	-	1	4
EEE207	Electromagnetic Fields	2	-	1	2	-	1	4
EEE208	Laboratories	-	6	-	-	6	-	4
<b>Total</b>		<b>15</b>	<b>8</b>	<b>5</b>	<b>15</b>	<b>8</b>	<b>5</b>	<b>36</b>

### Third year

Code	Subject	Hours/Week						Units
		First Term			Second Term			
		Th.	Prac.	Tut.	Th.	Prac.	Tut.	
EEE301	Eng. and Numerical Analysis	3	-	1	3	-	1	6
EEE302	Electrical Machines (II)	2	-	1	2	-	1	4
EEE303	Electrical Power	2	-	1	2	-	1	4
EEE304	Electronics (III)	2	-	1	2	-	1	4
EEE305	Communication (I)	3	-	1	3	-	1	6
EEE306	Microprocessor	2	-	-	2	-	-	4



EEE307	Control (I)	2	-	-	2	-	-	4
EEE308	Elective Subject	2	-	1	2	-	1	4
EEE309	Laboratories	-	6	-	-	6	-	4
<b>Total</b>		<b>18</b>	<b>6</b>	<b>6</b>	<b>18</b>	<b>6</b>	<b>6</b>	<b>40</b>

### Fourth year

Code	Subject	Hours/Week						Units
		First Term			Second Term			
		Th.	Prac.	Tut.	Th.	Prac.	Tut.	
EEE401	Engineering Project	1	3	-	1	3	-	4
EEE402	Communication (II)	3	-	1	3	-	1	6
EEE403	Power Electronics & Applications	3	-	-	3	-	-	6
EEE404	Electronics	3	-	-	3	-	-	6
EEE405	Power System Analysis	3	-	1	3	-	1	6
EEE406	Control (II)	3	-	1	3	-	1	6
EEE407	Elective Subject	2	-	-	2	-	-	4
EEE408	Laboratories	-	6	-	-	6	-	4
<b>Total</b>		<b>18</b>	<b>9</b>	<b>3</b>	<b>18</b>	<b>9</b>	<b>3</b>	<b>42</b>

These courses cover the three requirements, university requirements, college requirements and the requirements of the department and by: -

- 1 - Three courses forming 14 units and represents % 8.8 of the total units as university requirements.
- 2 - Four courses forming 20 units, representing 12.6% of the total units as College requirements.
- 3 - Twenty-seven articles forming 124 units and represents 78.5% of the total units as Department requirements.

The following tables show this distribution





## University Requirements

Code	Subject	Hours/Week						credit hours
		First Term			Second Term			
		Th.	Prac.	Tut.	Th.	Prac.	Tut.	
EEE101	Fundamentals of Democracy	2	-	-	2	-	-	4
EEE201	Fundamentals of Freedom	2	-	-	2	-	-	4
EEE104	Computer Science	2	2	-	2	2	-	6
<b>Total</b>		<b>4</b>	<b>2</b>	<b>-</b>	<b>6</b>	<b>2</b>	<b>-</b>	<b>14</b>

## College Requirements

Code	Subject	Hours/Week						credit hours
		First Term			Second Term			
		Th.	Prac.	Tut.	Th.	Prac.	Tut.	
EEE103	Engineering Drawing	-	3	-	-	3	-	2
EEE106	Mathematics (I)	3	-	1	3	-	1	6
EEE202	Mathematics (II)	3	-	1	3	-	1	6
EEE301	Eng. and Numerical Analysis	3	-	1	3	-	1	6
<b>Total</b>		<b>9</b>	<b>3</b>	<b>3</b>	<b>9</b>	<b>3</b>	<b>3</b>	<b>20</b>



## Department Requirements

Code	Subject	Hours/Week						credit hours
		First Term			Second Term			
		Th.	Prac.	Tut.	Th.	Prac.	Tut.	
EEE102	Digital Techniques	2	1	-	2	1	-	5
EEE105	Principle of Mechanical Eng.	2	1	1	2	1	1	5
EEE107	Electronics (I)	2	-	1	2	0	1	4
EEE108	Basics of Electrical Eng.	3	-	1	3	-	1	6
EEE109	Laboratories	-	3	-	-	3	-	2
EEE203	Computer Programming	2	2	-	2	2	-	6
EEE204	Electronics (II)	2	-	1	2	-	1	4
EEE205	Electrical Circuits	2	-	1	2	-	1	4
EEE206	Electrical Machines (I)	2	-	1	2	-	1	4
EEE207	Electromagnetic Fields	2	-	1	2	-	1	4
EEE208	Laboratories	-	6	-	-	6	-	4
EEE302	Electrical Machines (II)	2	-	1	2	-	1	4
EEE303	Electrical Power	2	-	1	2	-	1	4
EEE304	Electronics (III)	2	-	1	2	-	1	4
EEE305	Communication (I)	3	-	1	3	-	1	6
EEE306	Microprocessor	2	-	-	2	-	-	4
EEE307	Control (I)	2	-	-	2	-	-	4
EEE308	Elective Subject	2	-	1	2	-	1	4



EEE309	Laboratories	-	6	-	-	6	-	4
EEE401	Engineering Project	1	3	-	1	3	-	4
EEE402	Communication (II)	3	-	1	3	-	1	6
EEE403	Power Electronics & Applications	3	-	-	3	-	-	6
EEE404	Electronics	3	-	-	3	-	-	6
EEE405	Power System Analysis	3	-	1	3	-	1	6
EEE406	Control (II)	3	-	1	3	-	1	6
EEE407	Elective Subject	2	-	-	2	-	-	4
<b>Total</b>		<b>٥٤</b>	<b>٢٢</b>	<b>١٥</b>	<b>٥٤</b>	<b>٢٢</b>	<b>١٤</b>	<b>١٢٤</b>

These courses can be classified into eight groups of disciplines, as follows: -

- 1 - Mathematics and numerical analysis, which represent a total of 18 units.
- 2 - Courses that represent the foundations of electrical engineering and electronics, occupies a total of 49 units.
- 3 - Courses in communications majoring, occupies a total of 12 units.
- 4 - Courses in power engineering majoring, occupies a total of 29 units.
- 5 - Courses in majoring of systems and control engineering, represents a total of 10 units.
- 6 - Courses in majoring of computer sciences, represent a total of 24 units.
- 7 - Courses in majoring of humanity, represent a total of 8 units.
- 8 - Optional courses, represent a total of 8 units.



### 3.2. Mapping of Course Outcomes to Program Outcomes

To achieve its objectives, the department has developed curricula capable of achieving all of the eleven outcomes, which in turn ensure achievement of these objectives.

The following table shows the relationship between the curriculum of the department and the outcomes, this table identifies the ability of these curricula to achieve those outcomes.

**Table 3.1: Mapping of Electrical Engineering Courses to the Program Outcomes**

Course No.	Course title	Program outcomes										
		a	b	c	d	e	f	g	h	i	j	k
<b>First year</b>												
EEE101	Fundamentals of Democracy						√		√			
EEE102	Digital Techniques	√	√	√		√						
EEE103	Engineering Drawing	√				√					√	√
EEE104	Computer Science	√				√				√		√
EEE105	Principle of Mechanical Eng.	√		√		√						
EEE106	Mathematics (I)	√				√						
EEE107	Electronics (I)	√		√		√						
EEE108	Basics of Electrical Eng.	√		√		√						
EEE109	Laboratories		√	√	√	√	√	√	√			√
<b>Second year</b>												
EEE201	Fundamentals of Freedom						√		√			
EEE202	Mathematics (II)	√				√						
EEE203	Computer Programming	√				√				√		√
EEE204	Electronics (II)	√		√		√						
EEE205	Electrical Circuits	√		√		√						
EEE206	Electrical Machines (I)	√		√		√						



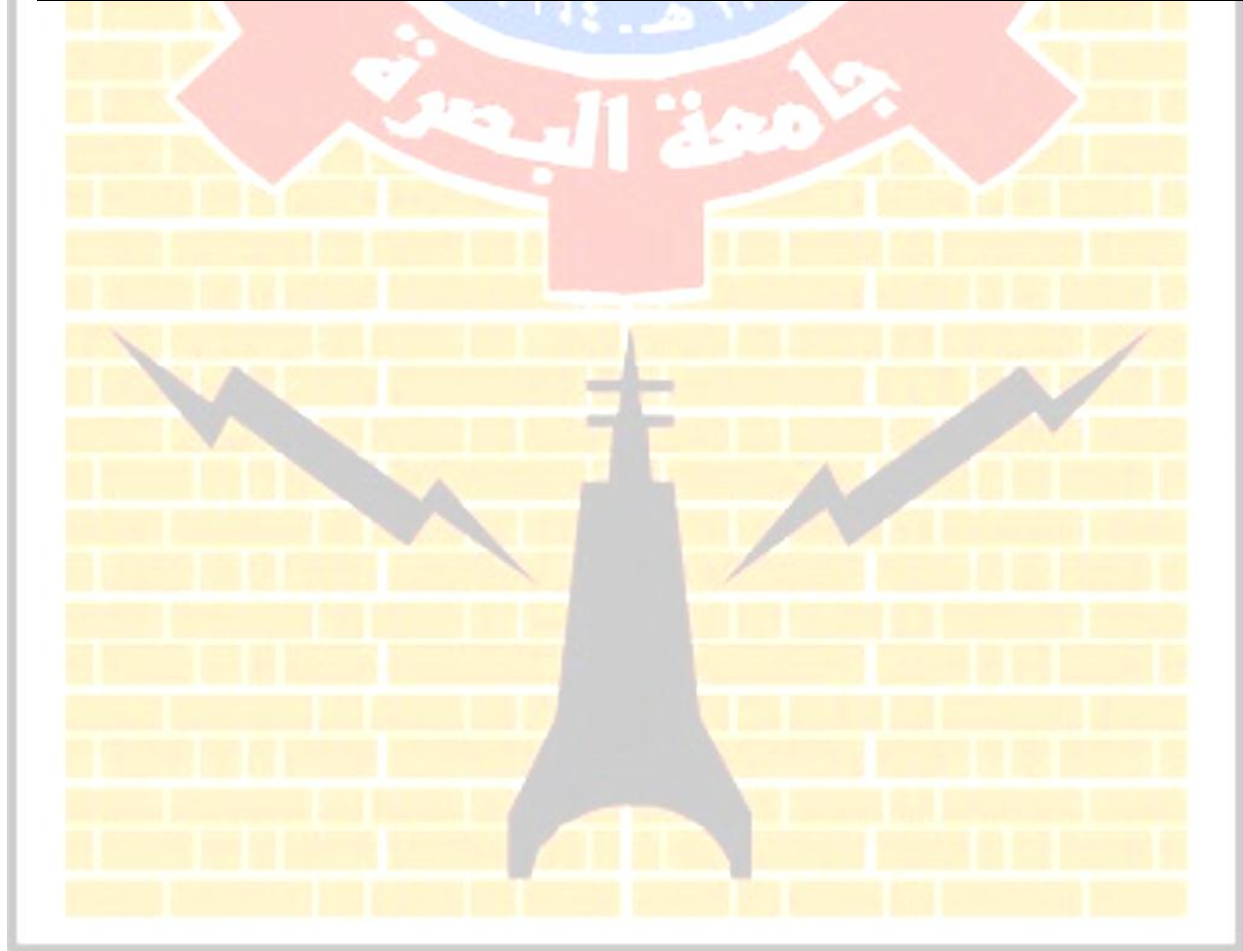
EEE207	Electromagnetic Fields	√		√	√									
EEE208	Laboratories		√	√	√	√	√	√	√					√
<b>Third year</b>														
EEE301	Eng. and Numerical Analysis	√				√								
EEE302	Electrical Machines (II)	√		√		√								
EEE303	Electrical Power	√		√		√								
EEE304	Electronics (III)	√		√		√								
EEE305	Communication (I)	√		√		√								
EEE306	Microprocessor	√		√		√								
EEE307	Control (I)	√		√		√								
EEE308	Elective Subject													
EEE309	Laboratories		√	√	√	√	√	√	√					√
<b>Fourth year</b>														
EEE401	Engineering Project	√	√	√	√	√	√	√	√	√	√	√	√	√
EEE402	Communication (II)	√		√		√								
EEE403	Power Electronics & Applications	√		√		√								
EEE404	Electronics	√		√		√								
EEE405	Power System Analysis	√		√		√								
EEE406	Control (II)	√		√		√								
EEE407	Elective Subject													
EEE408	Laboratories		√	√	√	√	√	√	√					√



### 3.3 SWOT Analysis:-

The SWOT analysis for this criterion is shown below:

		Helpful (to achieving the objective)	Harmful (to achieving the objective)
Internal origin (attributes of the department)	<b>Strengths</b>	<ul style="list-style-type: none"> <li>- The courses outcomes are fully covering the POs of the department.</li> <li>- The number of credit hours (158) is satisfactory and is greater than the number of credit hours determined by abet.</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>- The mechanisms used to measure the output of courses are not active.</li> <li>- There are only two elective courses, which are in fact not elective since the students have no choice in studying them.</li> </ul>
	<b>Opportunities</b>	<ul style="list-style-type: none"> <li>- Because of the availability of internet, especially the supported web sites, the faculty members can easily update the textbooks.</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>- Each faculty member can only change 20% of the curriculum content.</li> <li>- The inability to include new curriculum since the ministry rules doesn't allow such change.</li> </ul>





## Criterion4: Faculty

### 4.1 Leadership Responsibilities

The chairman of the electrical Engineering department is the most pivotal of all positions concerned with the instructional development. The policies of the college and university delegate the prime responsibility of the department daily operation to the chairman. The chairman is thus, assigned the task of running and management of the department. As the executive officer, the chairman is responsible to both the dean of the college of engineering and the department. It is the chairman who maintains daily contacts with the administration, with faculty and with students. It is in this last context where the chairman has to ensure that the department's mission and educational objectives are met. This could be achieved through the following:

1. **Departmental affairs:** developing and accomplishing departmental missions and objectives within those of the university; establishing departmental policies; conducting departmental meetings; involving faculty members and students in departmental decision making and activities.
2. **Academic affairs:** establishing departmental degree programs and curricula; evaluating, updating and improving program curricula, and the enforcing the quality of instruction.
3. **Office management:** administering departmental facilities; hiring, supervising, evaluating staff personnel (secretaries, laboratory assistants); establishing file and record systems (faculty, students, courses, academic data, correspondence); maintaining equipment and other department properties; requisitioning supplies; ordering textbooks.
4. **Personal professional performance:** providing professional leadership and setting an example in the department; demonstrating professional competence in teaching, research, and other professional activities; participating in professional associations and community service, setting academic standards; preparing term schedules of courses.
5. **Faculty affairs:**
  - Recruiting and orienting new faculty members; supporting and encouraging high performance in teaching, research, conference attendance, seminars, workshops, and other professional activities;
  - Enforcing faculty responsibilities and protecting faculty rights; evaluating faculty members and making documented recommendations to the dean for them.
6. **Student affairs:**
  - Facilitating a constructive environment to consolidate the program teaching and learning process.
  - Curricular and career advising of students.
  - Responding to student grievances and complaints.
  - Certifying students for graduation.
7. **Program affairs:**
  - Arranging meetings with faculty to decide on further steps to improve the program.



- Managing the essential funds for laboratory equipment, day-to-day functioning, other department social activities, etc.
  - Executing the electrical engineering Program, alteration, and improvement proposed by program constituencies.
8. **External communications:** conveying university policies and actions to the department, representing the department in the college, the university and all external agencies and communicating departmental programs and activities to students.
  9. **Budgetary affairs:** preparing annual departmental budget requests; administering budgetary allocations (preparing requisitions, authorizing expenditures, maintaining budget records).

#### **4.2 Authority and Responsibility of Faculty**

Faculty members are the back bone of the department and their role in the running of the department is very crucial. It is the department senate or faculty council that makes decisions, recommendations, proposals and policy changes within the department. The approval of the majority of the council is essential prior to passing to the chairman for further action. In effect, the department's council role is not limited only to academic matters but goes beyond that to include all aspects of governing the department. Though the responsibilities could vary among individuals in the department, all members participate in the following activities:

1. **Teaching:** proposing new curriculum courses, modifying and updating existing courses; course evaluation through conducting exams, quizzes, assignments, projects, etc. In order to provide consistency in the department, faculty members in the electrical engineering Department are recommended to:
  - Keeping up to date with relevant changes in their related fields and carefully preparing lectures and course materials.
  - Being accessible to students for academic consultation during scheduled or prearranged office hours.
  - Informing students regarding course formats, assignments, and methods of evaluation.
  - Maintaining teaching schedules in all but exceptional circumstances.
  - Informing students of any necessary cancellation and rescheduling of instruction.
  - Adhering to the schedules for submission of grades and evaluations by the department.

The faculty-members keep updated modern new ideas in the field of education and teaching methods technology depending on the individual motive. Each faculty member follow her/his own way in developing her/his ideas and techniques. There is also a workshop at the university called "teaching methods" which is one of the needed requirements for promoting any faculty member in her/his academic title.

Currently, there are no training activities in the college of engineering for the new faculty members.

2. **Research:** devote a good portion of their time to carry out research or creative work, within the constraints of the relatively heavy teaching loads. All full time faculty members are encouraged to make the results of such activities available, to other researchers and academicians, through publications, lectures, and other appropriate means.
3. **Service to the university:** some faculty members in the department are assigned different tasks at the university level. This is realized, among other duties, through; reviewing of





academic publications, editorial board members, organizing International conferences, and other academic associations and consultancy assignments.

### 4.3 Faculty

The electrical engineering department has 44 full and part time faculty members, including the chairman of department. In terms of rank distribution, they are broken down as follows:

- 1 Full-Professors
- 4 Assistant Professors
- 14 Lecturers
- 25 Assistant lecturer

Also, our faculty are distributed on Electrical Engineering fields as follows:-

- 9 in electrical power specialty
- 7 in power electronics specialty
- 4 in electrical machines specialty
- 8 in communication specialty
- 10 in control and systems specialty
- 2 in computer science
- 2 in optical electronics specialty
- 1 in microelectronics specialty
- 1 in optical communication specialty

Among our faculty, the number of years of teaching experience ranges from 2 to 33 years. In Table4.1, we list the faculty names and their ranks and specialties.

Table 4.1 Faculty names with their ranks and specialty.

No.	Name	Rank	Specialty
1	Dr. Ramzy Salim Ali (head)	lecturer	Comp. & Cont.
2	Dr. Saood Asayab	Prof.	Communication
3	Dr. Abdoalkareem Saoady	Asis. Prof.	Communication
4	Dr. Abas Hafid (the dean)	lecturer	Power
5	Dr. Rabea Hashim thijeel	Asis. Prof.	Power
6	Dr. Haider Mohmed Al sabag	Asis. Prof.	Communication
7	Dr. Gaidaa Jawad kadim	lecturer	Comp. & Cont.
8	Dr. Abdoaljabar Hadi Homadi	lecturer	Power



9	Dr. Ali Abdoalshaheed	lecturer	Power
10	Dr. Jawad Radi Mahmood	lecturer	Power
11	Aarif Alwan Ali	lecturer	Power
12	Dr. Adil Ahmed Aobaid	lecturer	Power
13	Dr. Majid Abdoanabi Alwan	lecturer	Comp. & Cont.
14	Dr. khairia Abdoaljaleel	lecturer	Power
15	Osama Yaseen	Asis. Lecturer	Power
16	Dr. Mohamed menoor	lecturer	microelectronics
17	Khalid mahdi Abdoalhassan	Asis. Lecturer	Power elect.
18	Fadil Rohma Tahir	Asis. Prof.	optoelectronics
19	Saad Mohy Falih	Asis. Lecturer	optoelectronics
20	Amar Abdoashaheed	Asis. Lecturer	Comp. & Cont.
21	Yahya Naser Salih	Asis. Lecturer	Optical 260mm..
22	Habeeb Jaber Nakad	Asis. Lecturer	Power elect.
23	Ali Ameen Abdoaljabar	Asis. Lecturer	Communication
24	Ayad Shaker Mahmood	Asis. Lecturer	Comp. & Cont.
25	Hanan Majeed Hameed	Asis. Lecturer	Communication
26	Samya Dawood Shaker	Asis. Lecturer	Comp. & Cont.
27	Basema Abraheem	Asis. Lecturer	Power elect.
28	D. Basim Talib Kadim	Lecturer	Power elect.
29	Aeda Abdoalkadim	Asis. Lecturer	computer



30	Dr. Basil Hani Jasim	lecturer	Comp. & Cont.
31	Hosham Kadim Hashim	Asis. Lecturer	Comp. & Cont.
32	Raonig Ali habeeb	Asis. Lecturer	Power elect.
33	Maha Kadim Gontab	Asis. Lecturer	Power & Machine
34	Aylaf Jaleel Majeed	Asis. Lecturer	Power elect.
35	Falih Mahdi Musa	Asis. Lecturer	Communication
36	Ali Abdoalhady	Asis. Lecturer	Communication
37	Abdoalmotalib Turki Rasheed	Asis. Lecturer	Comp. & Cont.
38	Mofeed Turki Rasheed	Asis. Lecturer	Comp. & Cont.
39	Saomar Sahib Hardan	Asis. Lecturer	Power & Machine
40	Hosham Lateef Saoady	Asis. Lecturer	Communication
41	Dr. Hamid wasfy	lecturer	Power & Machine
42	Fawzy Mohamad Mustafa	Asis. Lecturer	Communication
43	Shafaa Mahdi	Asis. Lecturer	Power elect.
44	Ali Kadim	Asis. Lecturer	Power & Machine

#### 4.5 Faculty Size

The total number of students in the department in last year (٢٠١١-٢٠١٠) was 370 and the number of the Electrical Engineering faculty members is 44, among them 3 have leave permission for PhD study and 8 members are part time members because of the same reason.

Then, the number of faculty available in department was 41 among them 33 as full time members and 8 as part time members. Thus, students to faculty ratio is 10:1.

The number of courses assigned to some faculty member is two courses, while it is three courses for others. The weekly hours for each course ranges from 2 to 4.

The Table below shows the weakly loads for faculty members.



Table 4.2 Faculty names with their weakly loads.

No.	Name	FT or PT	Load (hr/week)
1	Dr. Ramzy Salim Ali (Chairman)	FT	30
2	Dr. Abdoalkareem Saoady	FT	30
3	Dr. Abas Hafid (the dean)	FT	8
4	Dr. Rabea Hashim Thijeel	FT	20
5	Dr. Haider Mohmed Al sabag	FT	24
6	Dr. Gaidaa Jawad kadim	FT	24
7	Dr. Abdoaljabar Hadi Homadi	FT	18
8	Dr. Ali Abdoalshaheed	FT	16
9	Dr. Jawad Radi Mahmood	FT	16
10	Aarif Alwan Ali	FT	30
11	Dr. Adil Ahmed Aobaid	FT	14
12	Dr. Majid Abdoanabi Alwan	FT	12
13	Dr. khairia Abdoaljaleel	FT	26
14	Osama Yaseen	FT	24
15	Dr. Mohamed menoor	FT	14
16	Khalid mahdi Abdoalhassan	PT	12
17	Fadil Rohma Tahir	PT	12
18	Saad Mohy Falih	PT	6
19	Dr. Saood Asayab	FT	6
20	Yahya Naser Salih	FT	16



21	Habeeb Jaber Nakad	PT	12
22	Ali Ameen Abdoaljabar	FT	16
23	Ayad Shaker Mahmood	FT	6
24	Hanan Majeed Hameed	PT	6
25	Samya Dawood Shaker	FT	13
26	Basema Abraheem	FT	16
27	Dr. Basim Talib Kadim	FT	30
28	Aeda Abdoalkadim	FT	6
29	Dr. Basil Hani Jasim	FT	14
30	Raonig Ali habeeb	FT	14
31	Maha Kadim Gontab	FT	16
32	Falih Mahdi Musa	FT	30
33	Ali Abdoalhady	FT	18
34	Abdoalmotalib Turki Rasheed	PT	3
35	Mofeed Turki Rasheed	PT	16
36	Saomar Sahib Hardan	FT	24
37	Hosham Lateef Saoady	FT	14
38	Dr. Hamid wasfy	FT	23
39	Fawzy Mohamad Mustafa	FT	16
40	Shafaa Mahdi	FT	12
41	Ali Kadim	PT	16



#### 4.6 SWOT analysis:-

For this section, SWOT analysis gives us:

Helpful  
(to achieving the objective)

Harmful  
(to achieving the objective)

Internal origin  
(attributes of  
the department)

##### Strengths

- The student to faculty ratio is good and it is not exceed 10:1.
- 14% of the faculty members are of academic title higher than assistant professor.

##### Weaknesses

- 56% of the faculty members hold academic title of assistant lecturer.
- The department is more tilted towards teaching rather than research and other scholarly activities.

External origin  
(attributes of  
the environment)

##### Opportunities

- 8 of the faculty members currently are completing their PhD studies.
- The new adopted advising scheme will definitely improve the interaction between students and faculty members.
- All of the faculty members, who have Ms.C degree, have the intention to pursue their PhD degree.

- The inability to employ new faculty members because of the laws and rules of the ministry.





## Criterion5: Facilities

### 5.1 Space

The Electrical Engineering Department is part of the campus of the college of engineering in Qarmat Ali district, north of Basra, Basra, Iraq. The department is a two story building that incorporates, in it, offices for the faculty members and the supporting staff together with classrooms and laboratories offices.

For the undergraduate students, the department facilities are enough to support researches, learning, and teaching activities as well as doing their experiments at laboratories

#### 5.1.1 Offices

1. Administrative office: the office of the chairman is located on the second floor of the electrical engineering department building with approximately 35 m<sup>2</sup>, in area.
2. Administrative Supporting Staff; this consists of:
  - a. One full time secretary whose job is to administratively assist the chairman; this office is 14 m<sup>2</sup>, in area, and is directly connected to the chairman's office.
  - b. One head's assistant, who is a full-time faculty member whose job is to administratively assist the chairman. This office is 14 m<sup>2</sup>, in area.

These three offices, the chairman's and the secretary', combine to form the administrative office of the electrical engineering Department.

3. Faculty offices are allocated in three different levels of the Department's Building. There are 26 faculty offices in the department, each of which is about 16 m<sup>2</sup> in area, some faculty members is assigned a separate office, while the others is shared one office for each two members. Every faculty office is furnished and equipped with one PC and a link to Internet.
4. Meeting room: this room is about 35 m<sup>2</sup>, is mainly used for departmental related meetings at different levels. This room is properly furnished and is equipped with data show.
5. Examination Committee Room: it is located at the second floor near the administrative office with 35 m<sup>2</sup>, in area. Here is where students' records are held. It consists of one printing machine, one PC, and one photocopying/scanner machine.

#### 5.1.2 Classrooms

The electrical engineering department contains 8 halls as classrooms numbered from 1 to 8. The classroom area is 52 m<sup>2</sup>. The classrooms are air conditioned and equipped with blackboards and whiteboards for some of them.

#### 5.1.3 Laboratories

The department of electrical engineering has seven undergraduate, fully equipped, laboratories, with a total area of 1200 m<sup>2</sup>, all of which are located in the ground floor of building of the department. These labs are utilized to perform basic experiments needed to help the students understand the engineering concepts covered in the different courses. These Lab facilities could



also be utilized for building the term projects and senior projects as well. The electrical Engineering Labs, however, were structured to be adaptable and upgradable to accommodate the inevitable changes in the electrical engineering curriculum. Enough efforts are exerted in order to make sure that lab equipments are kept in good operating conditions. A summary of the 7 departmental laboratories is given, below, in Table5.1. The table also shows the courses associated with each lab.

**Table5.1: Laboratories' Names, Space Areas, and Associated Courses**

Lab. Name	Area (m <sup>2</sup> )	Associated courses
Machine Lab.	185	EEE309
Power elec. Lab.	185	EEE408
Computer Lab.	178	EEE104, EEE203
Electronics cct. Lab.	110	EEE102
Electrical cct. Lab.	178	EEE109, EEE208
Communication Lab.	178	EEE305, EEE402
Computer & Cont. Lab	178	EEE406

## **5.2 Resources and support**

### **5.2.1 Department Library**

The department has its own library which occupies one of the halls of the second floor of a building. Currently, this library is limited to the most important textbooks and assistance books to the curriculum of the department. Usually, each student borrows the books related to his current year curriculums at the beginning of the year; bring these books back in the end of that year.

### **5.2.2 The store**

The department has a store located at one of the halls of the ground floor and is run by two of the technician staff. This store contains the most important electrical and electronics elements which can be needed by students during their projects development. Each student has the right to borrow the elements he need.





### 5.2.3 Laboratories

As noted above, there are seven laboratories in the department of electrical engineering, which are fully utilized in electrical engineering courses, term projects and senior design projects as well. All these laboratories are well conditioned to be a comfortable place and to ensure an acceptable working temperature.

These labs are well maintained and properly run by a designated laboratories maintenance committee and the technical supporting team of technicians, which consists of 11 staff members.

### 5.3 SWOT analysis:-

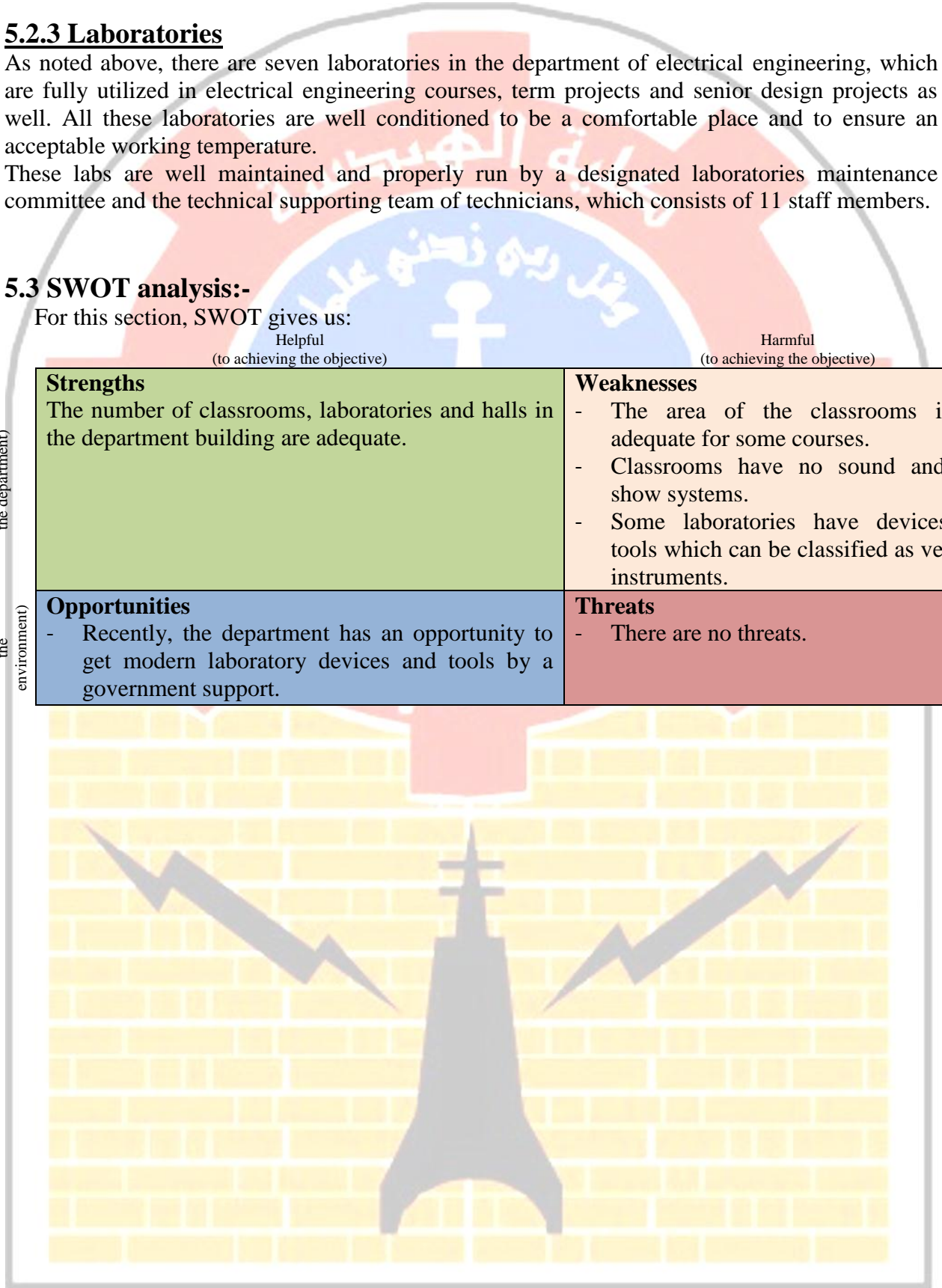
For this section, SWOT gives us:

Helpful  
(to achieving the objective)

Harmful  
(to achieving the objective)

Internal origin (attributes of the department)	<b>Strengths</b> The number of classrooms, laboratories and halls in the department building are adequate.	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>- The area of the classrooms is not adequate for some courses.</li> <li>- Classrooms have no sound and data show systems.</li> <li>- Some laboratories have devices and tools which can be classified as very old instruments.</li> </ul>
	<b>Opportunities</b> <ul style="list-style-type: none"> <li>- Recently, the department has an opportunity to get modern laboratory devices and tools by a government support.</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>- There are no threats.</li> </ul>

External origin  
(attributes of  
the environment)





## Criterion6: Support

The financial matters of the department follow the financial arrangements of the Engineering College. These arrangements are illustrated through the subsequent paragraphs in this Criterion.

### 6.1 College Budget Allocation Process

The Iraqi Ministry of Finance allocates the annual budget of all Iraqi ministries including the Ministry of higher Education and Scientific Research. The Ministry of Finance exerts all efforts possible in framing and application of the righteous financial policies to improve and develop the available resources for all ministries.

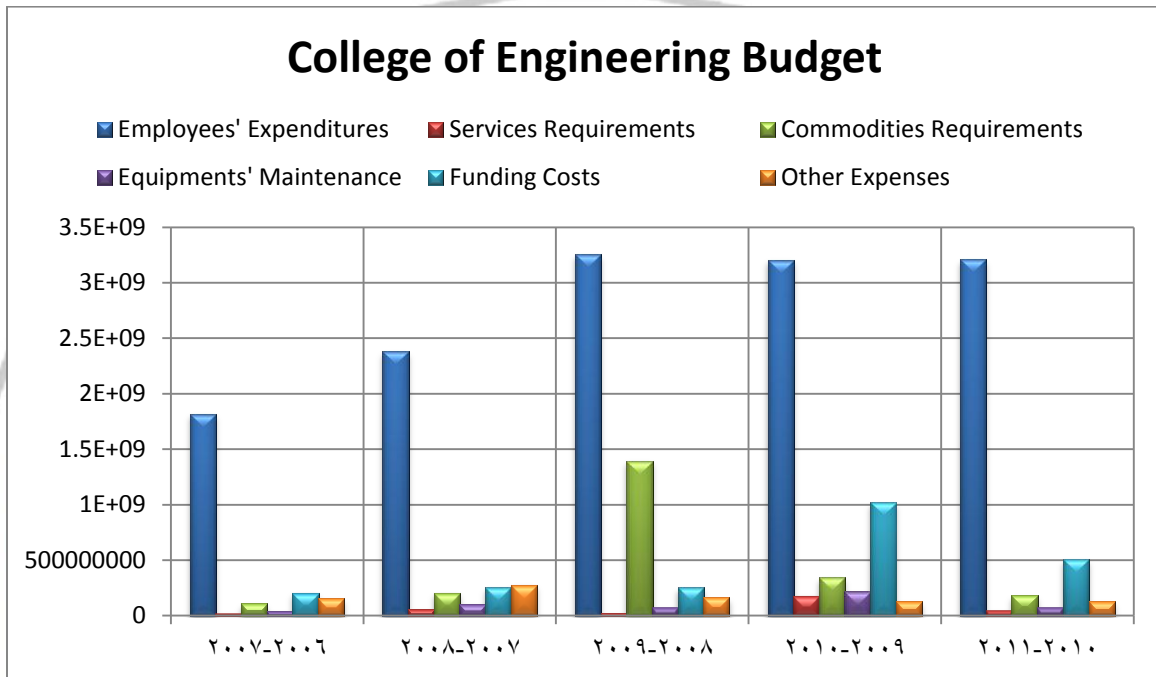
The Ministry of Higher Education and Scientific Research, in turn, allocates the planned annual budget to the University of Basra which gives the college of engineering its share of the budget. Then, each department gets its own financial part from the college and uses it in fulfilling:

1. Employees' expenditures: employees' salaries, lectures wages, retired faculty salaries, specific expenses, university expenses, risk expenses, affiliation rewards, and other expenses.
2. Services requirements: deputations, ceremonial activities, students' expenses, researches reinforcement, building cleaning expenses, athletic activities, conferences, and banking services.
3. Commodities requirements: all equipments (laboratorial, medical, schooling, agricultural, publications, books, fuels, and others).
4. Equipment maintenance: all maintenances (watery, electrical, buildings, furniture, books, gardens, records, work, and appliances).
5. Funding costs: furniture (wood and metallic), appliances, personal computers, telephones, copiers, printers, books and magazines, calculators, and machines.
6. Other expenses: students and unofficially employed staff.

Table 6.1 and Fig.6.1 summarizes all previous points.

Table 6.1: College of Engineering Budget Allocated by the University of Basrah over the Five Past Years

Allocations (ID)	Academic Year				
	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Employees' Expenditures	1820250000	2377500000	3254470000	3203500000	3210250000
Services Requirements	20450000	56450000	26800000	177900000	46124380
Commodities Requirements	109300000	204009750	1394000000	343600000	183487850
Equipments' Maintenance	42000000	104000000	71500000	215400400	70284200
Funding Costs	203200000	256000000	254750000	1023000000	509848500
Other Expenses	153750000	273750000	164750000	126000000	125288250
<b>Total</b>	<b>2348950000</b>	<b>3271709750</b>	<b>5166270000</b>	<b>5089400400</b>	<b>4145283180</b>



## 6.2 Sources of Financial Support

The college of engineering is a governmental institution that funds its activities from:

1. General governmental funds which represents the greatest portion of the budget.
2. Higher education fund which includes:
  - a. Laboratorial tests: 65% of funds for test team, 15% for university, 16% for bonuses, and 4% for maintenance.
  - b. Shops rent: 15% for university, 68% for bonuses, and 17% for maintenance.
  - c. Continuous learning courses: 65% for course trainers, 15% for university, 16% for bonuses, and 4% for maintenance.
  - d. Special courses: 65% for course trainers, 15% for university, 16% for bonuses, and 4% for maintenance.
  - e. Industry cooperation: 80% for work team, 10% for university, 8% for bonuses, and 2% for maintenance.
  - f. Internet Center: 15% for university, 68% for bonuses, and 17% for maintenance.
  - g. Student registration fees: 80% for bonuses and 20% for maintenance.
  - h. Exams results objections fees: 80% for bonuses and 20% for maintenance.
  - i. Self-funding study master and doctorate fees: 50% for students, 25% for lectures, and 25% for other stuff.
  - j. Water desalination plant: 15% for university, 68% for bonuses, and 17% for maintenance.

Table 6.2 shows a sample of sources and their income.



**Table6.2: Sources and Revenue Sample**

Item	Revenue
laboratories Tests	739549000
Shop Rents	6850000
Continuous Learning Courses	11125000
Special Courses	9448000
Industry Cooperation	42693000
Internet Center	4625000
desalination Plant	2275000
<b>Total</b>	<b>816565000</b>

### 6.3 SWOT analysis:-

For this section, SWOT gives us:

Helpful  
(to achieving the objective)

Harmful  
(to achieving the objective)

Internal origin  
(attributes of  
the department)

**Strengths**  
- Due to the process of assigning budgets to universities and colleges, the department receives a guaranteed annual budget.

**Weaknesses**  
- The department has no external financial resources - a drawback which needs to be solved. Sometimes, when the assigned annual budget is not enough, the chairman has to cut from the expenditures.

External origin  
(attributes of  
the environment)

**Opportunities**  
- In this year, the department gets seven scholarships at worldwide universities for PhD studies.

**Threats**  
- No developing workshops or programs are offered to faculty members.  
- Deputations are only assigned to professors and persons in charge.

### Questions and Answers:

- Are program resources poor, enough, or more than good? How does the department secure their availability? Can they be enriched?  
The used department resources are enough; they are annually assigned to the department from the budget of the college.
- How far do the teaching, learning, and research be affected by the availability of resources and the ministry/university support?  
Of course, the university/ministry support affects the whole process of teaching and research in the department.
- Are there any arrangements to train faculty members and students in foreign workshops or via exchange programs?  
No, there are not.



4. Is there any participation from outside the department in the process of putting the curriculum and the improvement of teaching and scientific research?  
No, there is not.

