



***COLLEGE OF ENGINEERING***  
***UNIVERSITY OF SALAHADDIN- HAWLER***

**Self- Assessment Report**  
***Bachelor of Engineering***

Prepared by  
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# **The Self-Assessment Report Team, College of Engineering, University of Salahaddin- Hawler**

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# **Self- Assessment Report of College of Engineering- University of Salahaddin- Hawler**

## **Overview**

This report is prepared based on a project proposed by UNISCO and supported by Al-Shekha Moza, the first lady of Qatar for developing and qualifying of the high education in Iraq. The project named “ Development High Education System in Iraq” . for this purpose a workshop is carried out in Qatar- Doha between 5 to 10 of June in 2011. The participants were the responsible of quality assurances of 12 Engineering College in universities of Iraq. Four of them were from Kurdistan Region. In 5-10/ 6/ 2011 a team of preparation was assigned consisting of the Dean of Engineering College as chairman, and directory of quality assurance in the Ministry of High Education and Scientific Research, the head of quality unit of Engineering College, the head of committee of quality assurance of departments, and an expert as members. The team started its works soon after committee formation up to the end of September completing it and submitted as a first draft to the Committee of Review on 1st October of 2011.

# **Self- Assessment Report of College of Engineering- University of Salahaddin- Hawler**

## **i. Abstract**

The College of Engineering is one of the oldest institution of the University of Salahaddin- Hawler mainly awarding Bachelor of Engineering, meanwhile periodically awarding M.Sc. and Ph. D. The College is built on an area of more than 616, 000 sq. m. It includes seven departments (*Civil, Electrical, Mechanical, Architectural, Software, Dams & Water Resources and Survey*) of four year programs except Architectural department of five year program.

## **ii. History of the College and the Programs**

College of Engineering is one of three colleges Engineering, Science and Agriculture opened after establishment of the University of Sulaimania in 1968-1969 in Sulaimania City in Kurdistan of Iraq. The College started with only Civil Engineering Department in the academic year 1968-1969 in. During this year (44) students were accepted. Civil Engineering Department offers a four years B.Sc in Engineering. In year 1971-1972 the program of four year B.Sc. changed to five year program . In June, 1971, for first time 45 students graduated in first attempt. By 1973, the Electrical department was opened. In 1981 the former regime by a political decision transferred the University to Erbil. Mechanical Department opened in 1986 and the first group of student accepted in 1986-1987. In 1993, the architectural department opened in 1993. At the beginning of current century Software, Dams & Water Resources and Survey Engineering were opened.

Now the college includes 7 departments on about 615 000 m<sup>2</sup> .

In 1976, Postgraduate studies of two years (M.Sc) of Civil Engineering in specialists Structures, Hydraulics, and Highways commenced in the academic year 1976-1977. During 1990s Postgraduate studies extended leading to Ph.D degree .

To date, the college has graduated more than 6000 undergraduate students, 120 postgraduate 120 M.Sc. and 30 high Diploma) and 5 Doctorates . Most of the current college staff are graduated of this college. Development of curriculum proposed and several meetings and conferences were conducted and finally extending the program to five year was found to be the best solution.

By the year 2009-2010 Quality Assurance (QA) unit and Planning units were established.

## **iii. Mission**

- (1) To be able to produce capable engineering graduates who can participate actively in the process of supporting the infrastructure and lead the way in the construction of a sound and productive multidiscipline industry.
- (2) To link between the college research and the requirements of the technical progress of the community.
- (3) To strengthen the trust of society in the ability of the engineering science to provide answers for the requirements of a changing world.

#### **iv. Vision**

- (1) To be able to prove its status as a leading engineering and research body with credible foundation and orientation.
- (2) To be recognized internationally for academic achievement and leadership in engineering education.

# 1. Organization and Administration

Organization of administration in the college is done by:

1. Supervising admin employees with related units like typing, archive, supplying, and defining their duties.
2. Recommend the granting of administrative staff and workers bonuses and promotions, and annual increases under the laws and instructions.
3. Organizing the medical examination form and refer to the medical university.
4. Issuing official letters issued by deanship and following them without delaying and saving a copy in archive.
5. Time control of employees and technicians at the college (except teaching staff) and workers with providing reports on the progress constantly and orderly conduct of college.
6. preparing data including all employments and providing them to presidency of the university and terminating the lacks.

## 1.1 Contact:

The means of contacts and connecting usually through official letters between deanship and departments, colleges, or any other agencies. It is preferred to make contacts through connection networks. The details of addresses of contacts are illustrated in below.

**Address:** Erbil , Kurdistan Region, Iraq

**Phone Number:**

Mob: +(964) 750 446 14 53

Tel: +(964) 66 2260198

**E-mail:** eng\_usalah@yahoo.com

**Website:** [www.eng-usalah.org/](http://www.eng-usalah.org/)



## 1.2 Organization Structure of the College

### Council of College:

Name	Tel.: Mobile	Email	Address of the Position
Jalil A. Hamadamin (Lecturer)	+9647504478771	jalilaziz@gmail.com	Head of Electrical Engineering
Dr.Soorkeu A. Atrooshi (Lecurer)	+9647501140208	soorkew@gmail.com	Dean's Associate
Dr.Shawnim R. Jalal (Assist. Prof.)	+9647504709424	shawnim100@yahoo.com	The Dean
M.Faisal Abdulrahman Daham (Assist. Prof.)	+9647504481007	faisal_a_daham@yahoo.com	Head of Dams & Water Resources Engineering
Nazhad A. Husain (lecturer)	+9647504493023	Nazhad6@yahoo.com	Head of Mechanical Engineering
M.Bilnd Ibrahim Aziz (Assist. Lecturer)	+9647504476893	blindzayi@yahoo.co	Representative of the teaching staff
Azad A. arshad (lecturer)	+9647504470077	azadarshad@yahoo.com	Head of Survey Engineering
<u>Dr.Saran Akram Chawishli</u> (Lecturer)	+9647504235644	Saran_chawishly@yahoo.com	Head of Software Engineering
<u>Dr.Ali Izzadin Marouf</u> (Lecturer)	+9647504513568	alialalim@yahoo.com	Head of Architectural Engineering
<u>Dr.Abdulkarim Derwesh Mahmood</u>	+9647504451849	<a href="mailto:abdmqazi@yahoo.com">abdmqazi@yahoo.com</a>	Head of Civil Engineering
<u>Dr.Mohammed A. Ibrahim</u> (Assist. Prof.)	+9647504859813	<a href="mailto:mabdulbaki@yahoo.com">mabdulbaki@yahoo.com</a>	Head of Scientific Affair
<u>M.Dlawar Rauf Maruf</u> (Assist. Lecturer)	+9647504461453	<a href="mailto:draoof@yahoo.com">draoof@yahoo.com</a>	Head of Registration
<u>Hawkar Ahmed Noori</u>			Representative of the students

### -Dean Office:

- **The Dean:** Assistant Prof. Shawnim R. Jalal (Ph.D)
  - Email: shawnim100@yahoo.com
  - Telephone: Mobile : +9647504709424
- **Dean Office-** Secrete
  - Email: **E-mail:** eng\_usalah@yahoo.com
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**-Head of Departments:**

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Assist. Prof. <a href="#">Faisal Abdulrahman Daham</a>	+9647504481007	faisal_a_daham@yahoo.com	Head of Dams & Water Resources Engineering
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Azad A. arshad (lecturer)	+9647504470077	azadarshad@yahoo.com	Head of Survey Engineering
<a href="#">Dr.Saran Akram Chawishli</a>	+9647504235644	Saran_chawishly@yahoo.com	Head of Software Engineering
<a href="#">Dr.Ali Izzadin Marouf</a>	+9647504513568	<a href="#">alialalim@yahoo.com</a>	Head of Architectural Engineering
Assist. Prof <a href="#">Dr.Abdulkarim Derwesh Mahmood</a>	+9647504451849	abdmqazi@yahoo.com	Head of Civil Engineering

**-Scientific Affair Unit:** Assistant Prof. Muhammad A. Ibrahim  
Tel. Mob.: +9647504461453  
Email : draoof@yahoo.com

**-Assistant of the Dean:**

- **Admin and personal** (Personal, Archive, Information, Copying, Changer)
- **Accounting:** Mrs. Rezan Ahmad
- **Auditing**
- **Library**
- **Maintenance and Repairing** (Services, Electrical Generator)
- **Sport**
- **Recreation Facilities Gardens**
- **Recreation Facilities Gardens**

**-Register:** Delaware R. (MSc.)  
Tel. Mob.: +9647504461453  
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**-Planning Unit:** Ibrahim Baqy (Ph.D)  
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Email: ibaqui@yahoo.com

**-Quality Assurance (QA):** Assistant Prof. Noori S. Ali

Tel. Mob.: +9647504537545

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### **1.3 Role of the College**

The college includes seven departments, civil engineering, electrical, mechanical, architectural, software, workshops dams and water resources and survey engineering. In each department, the head of department, teaching staff, engineers direct and control of academic program through their activities of teaching, supervising labs, , stores...etc. The role of the college is providing all tools and means of teaching, labs and all other requirements. Also approving on minutes of department committees regarding research projects, cadency of scholarship, and grading of students by council of the college. The main

factors contributing in passing of the programs of the college and department may be;

1. Admin supervising of all employees.
2. Completing all affairs of employees
3. Supervising all projects carried by the college like providing equipments of labs, constructing of buildings for three departments and library expansion and parks and issuing orders for rewarding of employees of the college according to the rules and instructions.
4. Facilitate for granting ordinary permissions for each employee.
5. Advising and monitoring of student and solving their problems and supervising their cafeteria and restaurant.
6. Follow up all seminars and workshops conducted in the college by our teaching staff and other external experts.
7. Participating of numerous of teaching staff in trainings and conferences in and aboard.
8. Team working of teaching staff with other employees.

The problems facing the college causing the college not to be successive are:

#### **a .Financial obstacles**

Each year the college define its budget for carrying out its programs and submitted to the ministry of financial which reduce the budget leading to be limited and cannot cover all needs.

#### **b. Admin obstacles**

Because of above financial problems, the college can not assign or rent adequate numbers of workers of cleaning or other services.

#### **c. Scientific obstacles**

##### **Scientific obstacles are:**

- Lack in providing international journals, lab equipments, materials that used in labs.

- Also delaying in advertising of accepted students,
- much vacations,
- Lack in teaching staff in new opened departments,
- Lack in requirements of teaching halls.

#### **1.4 Strategic Planning for Teaching, Learning and Research**

Can be defined by followings:

1. Studying all scientific and educational agreements and conducting those benefits the college like scholarship for teaching staff for Ph.D, degree and engineers for MSc.
2. Supervising and monitoring our library and converting it to electrical library,
3. Studying the submitted calls to assign of those limited specialists like electrical and software.
4. Studying the proposals of departments dealing with teaching and learning.
5. Studying strategic plans of departments for accepted number of Bachelor student and postgraduates and submitting to presidency of the university.
6. Preparation of architectural department for conducting a scientific conference. Also preparation of the department of dams and water resource building for conducting the International conference of University of Salahaddin- Hawler.
7. Promoting teaching staff for upgrading and scientific debates.
8. Participating of some of teachers in conferences conducted out of the region in addition to discuss the dissertation of MSc. And Ph.D.
9. Cooperation with universities and scientific foundations in and out of Iraq benefiting in studying, research and join supervising.
10. Approval of programs of training of continuous learning.

#### **1.5 Specialist contents of Programs**

The program contents includes civil, electrical, mechanical, architectural, dams and water resources, and survey engineering.

#### **1.6 Means for Awarding the Certificate**

The college offers student bachelor's degree after completing all requirements equaling to 163 to 192 units within 4 years, except for architectural engineering which is 5 years.

Following are the required numbers of units in each program:

<b>Name of Department</b>	<b>Nos. of Units</b>	<b>Program Duration</b>
Civil Eng.	166	4 years
Electrical Eng.	163	4 years
Mechanical Eng.	167	4 years
Architectural Eng.	192	5 years
Software Eng.	168	4 years
Dams & Water Resources Eng.	166	4 years
Survey Eng.	*	

\*New opened 2 years ago

## **1.7 SWOT- Analysis**

### **Strength**

- Dynamic and highly motivated staff,
- Sufficient number of staff for various management tasks,
- Adequate experience and academic background for the management,
- Well established team work and consultancies policies,
- Ability to solve problems based on council decisions,
- Sufficient space for expansion.

### **Weakness**

- Lack of financial resources and support to maintenance, renovation, and development,
- Insufficient independence from the central body,
- Lack of vocational-staff and skilled technicians,
- Administration founded on paper based document processing,
- Inadequate merit based incentives for promoting excellence,
- Complicated and restrictive purchase and hiring procedures,
- Working against a culture of bending regulations and tribal stereotypes,

### **Opportunities**

- Participation in international bodies and accreditation programs,
- Joint programs with the industry and local community,
- Accessible prospects for development of staff and structure,
- Emerging engineering based technologies that do not require mammoth infrastructure or industrial experience,
- Community appeal of engineering as a social status.

### **Threads**

- Imposing programs from the central body that do not match with the specific, core, size, and requirements,
- Lack of sufficient planning and over loaded admission and transfer programs,
- Competition with emerging private colleges.

## **2 STUDENT**

### **2.1 Admission**

Students who have successfully completed 12 year of secondary education and based on the results of centrally administrated examination. Entrance to certain department is by competitive grade got in examination. Usually students getting high degree will enter Medicine group colleges i.e Medicine, Dentistry, or Pharmacy.

However there students with high grades wish to enter Engineering Colleges. The plan of admission must be based on actual need for each specialist.

### **2.2 Evaluation of Student**

Students in the program are evaluated with respect to their preparation for entry into general practice in engineering and their preparation for graduate education. The evaluation is conducted through performance of courses as below:

- Exams ( seasonal exams, quizzes, and final exams)
- Problem sets and homework
- Laboratory assignments
- Senior Project (Dissertation , oral and written)

### **2.3 Student Progress Monitoring**

Now monitoring of student progress is primarily the responsibility of the head of scientific department and head of quality assurance committee.

Attention is focused on those students having some form of academic difficulties.

The grades and percentage of pass of student at the end of each academic season are reviewed and are evaluated by the head of each department.

### **2.4 Advising**

Under the responsibility of the Dean assistant and head of the department. During registration periods the college is called upon to collaborate in the advising of students.

Also professors advise students and keep them informed of any special events in the classroom and during regular season hours. Students representative for each class elected at the beginning of each academic year. Formerly classroom advisor was assigned as an assistant for the head of department. Briefly advisors are assistant of the Dean, head of the department, professors and student representative.

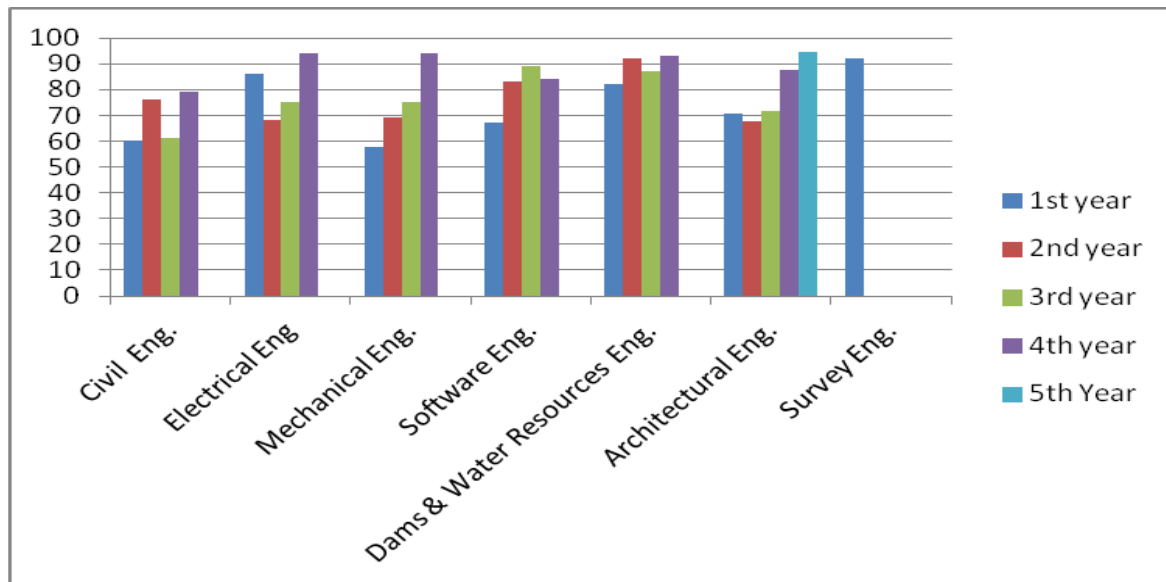
### **2.5 Learning and Outcomes**

Program outcomes are derived from program educational objectives. It is expected that the graduates of Aerospace Engineering program will exhibit the following outcomes at the time of graduation:

- a. An ability to apply knowledge of mathematics, science, and fundamental engineering.
- b. An ability to design and conduct experiments, as well as to analyze and interpret data.
- c. An ability to design a system, component, and process to meet desired needs.
- d. An ability to work effectively in multidisciplinary teams.
- e. An ability to identify, formulate and solve engineering problems.
- f. An understanding of professional and ethical responsibility.
- g. An ability to communicate effectively in written, oral, and graphical forms, including the use of high-quality visual aids.
- h. The broad education necessary to understand the impact of engineering solutions in a global and societal context.
- i. A recognition of the need for, and an ability to engage in life-long learning.
- j. A knowledge of contemporary issues.
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

## 2.6 Number of Students in Each Department and Percentage of pass

The percentage distribution of students in each department and classes are illustrated below for academic year 2009-2010 academic are as follows:



**Fig. (1) Percentage of pass of students in academic year 2009-2010**

The numbers and percentage for both academic years 2009-2010 and 2010-2011 are illustrated in appendix A2

The overall number of accepted and graduated from the date of establishment to update are shown in Appendix- B

## 2.7 Number of students in Each Classroom

The overall average number of students in each class of the department is illustrated in Table below in two academic years 2009- 2010 and 2010- 2011.

Year 2009-2010							
Average Number in Classroom							
Class	Civil	Electrical	Mechanical Eng.	Architectural Eng.	Software Eng.	Dams & Water Resources Eng.	Survey Eng.
1 <sup>st</sup> year	32	40	26	34	47	22	25*
2 <sup>nd</sup> year	30	27	36	33	62	26	-
3 <sup>rd</sup> year	35	32	30	33	57	21	-
4 <sup>th</sup> year	42	36	27	33	65	30	-
5 <sup>th</sup> Year	-	-	-	28	-	-	-

\*Surveying Eng. Dep. Opened in 2009-2010

Year 2010-2011							
Average Number in Classroom							
Class	Civil Eng.	Electrical Eng	Mechanical Eng.	Architectural Eng.	Software Eng.	Dams & Water Resources Eng.	Survey Eng.
1 <sup>st</sup> year	38	41	25	36	43	22	40
2 <sup>nd</sup> year	32	45	35	39	55	26	23
3 <sup>rd</sup> year	37	25	32	39	63	21	-
4 <sup>th</sup> year	45	27	27	28	61	30	-
5 <sup>th</sup> Year	-	-	-	34	-	-	-

## 2.8 Role of Student in Evaluation of Performance of the Subject Taught and Teaching Staff

At the end of the academic year 2 weeks before terminating teaching, the learning out-come and the performance of the lecturer based on the typical form prepared shown in section (5.4.5).

## 2.9 Summer Training

The student must attend at summer ( 3<sup>rd</sup> year students) out the college on construction industry to complement understanding theoretical materials with practical on project sites for 1 month duration. Student usually guided and monitored by responsible of project. A committee of supervising and monitoring for each department follows up the student in attendance and applying on the project. His participating and practicing of the student at the end of his applying should be approved by project's engineer.



## **2.10 SWOT- Analysis for Student**

### **Strengths**

- Relatively students having high scores enable them to to enter engineering colleges,
- Most of students acceptance based on their willing,
- Free education providing dormitories especially for students of out of Erbil,

### **Weaknesses**

- Distribution of students is centrally disregarding willing of some of them,
- Accepted number is more than capacity of facilities,
- Weakness in guiding and advising of current system,
- Delaying in advertising names of accepted students,
- Absence of some of students during program period,
- Feedback of students for assessment of subject and its teaching is unrealistic,

### **Opportunities**

- Opportunity in getting business especially in industrial construction in private sectors,
- Availability of opportunity in postgraduate studies,
- Parallel education,

### **Threads**

- Availability of private sector for high education,
- Difficulty of getting jobs in public sector,
- There are no feasibility studies for needs of graduated students,

## **3. Educational Objectives of Degree Certificate and its Consistency with University Objectives**

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

### **3.1 Relationship of Program Outcomes to Educational Objectives**

Program Outcomes outlined reflect a foundation of knowledge and skills that, if satisfied, provide graduates of the Engineering programs with the tools needed to successfully achieve the Educational Objectives

defined above. Program Outcomes must be designed to ensure ABET criteria ( a - k) are successfully met by the Engineering program. Maintaining an educational focus that emphasizes competence and future professional success for our graduates. The Program Outcomes defined below will be developed and approved by the faculty during a meeting . following Table shows the listing of our program educational objectives, reflecting their relationship with ABET’s Criteria (a-k) outcomes. The table shows that there are multiple links between our objectives and ABET’s Criteria (a-k).

### 3.2 Program Educational Objectives (PEOs)

Our Engineering graduates will:

1. Address the challenges that they will face in their careers.
2. Pursue life-long learning and continue to develop their problem-solving skills.
3. Exhibit leadership and team-building skills in a bilingual setting.
4. Provide quality service to the profession, to our government, and to our society.
5. Function as effective members of interdisciplinary teams.
6. Apply current and innovative engineering technologies and criteria.

Criteria (a-k outcomes)	Program Educational Objectives (PEOs)					
	1	2	3	4	5	6
a. An ability to apply knowledge of mathematics, science, and fundamental engineering.						
b. An ability to design and conduct experiments; analyze and interpret data						
c. An ability to design a system, component, and process to meet desired needs.						
d. An ability to work effectively in multidisciplinary teams.						
e. An ability to identify, formulate, and solve engineering problems						
f. An understanding of professional and ethical responsibility						
g. An ability to communicate effectively in written, oral, and graphical forms, including the use of high-quality visual aids.						
h. The broad education necessary to understand the impact of engineering solutions in a global and societal context.						
i. A recognition of the need for, and an ability to engage in life-long learning.						
j. A knowledge of contemporary issues (within engineering)						
k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.						

### 3.3 Constituencies

The constituencies of the of each specialist engineering are:

- Teaching staff (Faculty) of the Department
- Alumni
- Employers of the graduates of the program.

The consistency of each outcome with one or more of program education objectives will be conducted in our college by above first three constituencies in all departments.

## **4.CURRICULUM**

Describe how students are prepared for a professional career and further study in the discipline through the curriculum and indicate how the curriculum is consistent with the Program Educational Objectives and Program Outcomes. The Program's aim is to meet the educational objectives and outcomes and to educate graduates that are well-rounded to enter the profession or to pursue graduate studies. This is achieved through a well-balanced set of courses to ensure the strength needed in basic science and engineering. The courses required are versatile. Each course has a set of objectives that focuses on learning the materials needed to ensure the level of competency required from students. The Program outcomes are listed in each course descriptions; and the specific relevance of the course to various outcomes is indicated. The instructor ensures the compliance with the course objectives and outcomes in an evaluation of students' performance in the course. This evaluation is used to improve the course, if students' performance falls short of intended learning objectives, in an effort to maintain compliance with the Program educational objectives and outcomes. The curriculum in engineering college has a requirement of not less than 163 units. This curriculum is organized under three general categories:

### **4.1 Basic or ( Core ) curriculum**

Represent those materials that are taught in all departments of the same classes. In College of Engineering followings are the basic curriculum:

- \* Mathematics taught 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Years,
- \* Computer Science taught in 1<sup>st</sup> and 2<sup>nd</sup> Years,
- \* Technical English taught in 1<sup>st</sup> Year
- \* Graduated Engineering project in 4<sup>th</sup> Year.

### **4.2 Basic or (Core) curriculum of the University**

Are those which are taught in the all colleges of the university.

- \* Kurdology taught in 1<sup>st</sup> year in all of the university colleges.

### **4.3 Major ( specialist of each department) curriculum**

These are the main and specialist of each department which involves about 75-80% of all of the curriculum. The subjects with their details are illustrated in self- Assessment report of each department.

### **4.5 Projects, Designs and Research**

Student is required to use the latest software for the analysis and design of his project. He also must type, plot and draw related figures and diagrams by using appropriate software. At the of the year he must submit his project and examined by examining committee. The name and their supervisors at each department report later are listed.

#### 4.4 The outcomes of the curriculum

The outcomes a to k for each subject in our departments are shown in self- assessment report of each one according to opinions of teaching staff, alumni, and employers.

Subjects	Outcomes								
	A	B	C	d	E				k
----									
-----									
----									

The outcomes of each subject in each department are shown in reports of departments. For more detail refer to Appendix B1

#### 4.8 Alumni and Employers Survey

A survey conducted by personal contacts to ensure that the graduated students of civil engineering during the academic years 2009-2010 and 2010-2011 are employed or not and as shown in following Table:

Year	No. employed in public sectors	No. employed in private sectors	No.employed in university	Employed	No contact
2009-2010 First and second attempts	6	20	3	5	101
2010-2011 first attempt	0	9	0	22	59

Two further surveys were conducted to assess the extent to which CE graduates are performing in the light of the stated program learning objectives and program outcomes.

The surveys included: alumni survey, and employers' survey.

The details concerning the number of respondents to the different surveys are as follows:

The surveys of alumina employed by the various ministries covered 38 alumni responses and the results as shown in Appendix B2:

#### 4.6 SWOT- Analysis of curriculum

##### Strengths

- Comprehensive covering all specialists of each department,
- Can be updated by 5-10% annually,
- . Excellent academic backgrounds
- curriculum designed to meet both local needs and international standards

### Weaknesses

- Poor practical application,
- Huge quantities for each class of department accommodated for each academic year,
- The culture of being “spoon-fed”

### Opportunities

- Development of curriculum consistency with advanced sciences and means,
- Availability of on-line electrical library,
- . Possibility of re-designing curriculum and by-laws to allow multi-disciplinary,

### Threads

- Difficulty coupling with international universities,
- Availability of a central rigid system limiting renewing,
- Discontinuity with advanced technologies.

## 5. Teaching Staff (Faculty)

One of the most important elements of our college is our teaching staff. They are responsible for the design, review, and maintenance of the curriculum and the teaching the subjects and laboratories to insure consistency with the educational program objectives. They are also charged with preparing students with very diverse backgrounds to become successful engineers. They are consist of full-time and part- time. More than 90% of our teaching staff are appointed as full-time and remaining are teaching according to an agreement of contract.

### 5.1 Teaching Staff Levels, Certificates, and Experiences

The detailed information of grading, certificates and experiences for each department are shown in Table below.

Department	Certificate	Professor	Assistant Prof.	Lecturer	Assistant Lecturer		Total
<b>Civil Eng.</b>	Ph. D		9	9		18	<b>38</b>
	M.Sc.			3	17	20	
	H. Diploma						
	B.Sc.					23	
<b>Electrical Eng.</b>	Ph. D	-	2	4		6	<b>27</b>
	M.Sc.		1	4	16	21	
	H. Diploma					0	
	B.Sc.					27	

<b>Mechanical Eng.</b>	Ph. D	2	3	8		13	<b>30</b>
	M.Sc.	-	2	3	12	17	
	H. Diploma					1	
	B.Sc.					20	
<b>Architectural Eng.</b>	Ph. D						<b>21</b>
	M.Sc.						
	H. Diploma						
	B.Sc.						
<b>Software Eng.</b>	Ph. D			3		3	<b>18</b>
	M.Sc.			14	1	15	
	H. Diploma					3	
	B.Sc.					8	
<b>Dams &amp; Water Resources Eng.</b>	Ph. D	1	3	1			<b>11</b>
	M.Sc.		2	2	8		
	H. Diploma						
	B.Sc.					8	
<b>Survey Eng.</b>	Ph. D			1		1	<b>3</b>
	M.Sc.		1		1	2	
	H. Diploma						
	B.Sc.						
<b>Total</b>							<b>148</b>

## 5.2 Development of Teaching Staff Abilities

The Program encourages faculty development in (1) teaching and education activities; (2) research and scholarly activities; and (3) participation in the professional societies and conferences. To various degrees, the faculty have been involved in:

- Education : Course/Curriculum Development , Textbooks, Technology tools in classroom
- Research : Publication papers in Journals,
- Participating in conferences, workshops, attending in seminars
- Presenting seminars,
- Committee Participation: Department, College , and University levels (membership, chair duties),
- Industry Collaboration: Consulting , industry projects, and part-time Employment,
- Quality assurance: the process of continuous learning imposes staff to attend seminars, workshops, conferences, conducting and publishing papers...etc. during academic year.

Section 5.5 explains in detail of the system of Quality Assurance.

The summary of all activities for developing of teaching staff during last two years: are shown in section 5.5.10.

## 5.3 Ratio of Staff to Student

The number of staff , student and ratio of them is shown in following Table.

Department	2009- 2010			2010- 2011		
	Staff Number	Student number	Staff: Student	Staff Number	Student number	Staff: Student
Civil Engineering	36	490	1 : 14	36	454	1 : 13
Electric Engineering						
Mechanical Engineering	30	263	1 : 9			
Architectural Engineering						
Software Engineering	20	231	1 : 12	21	222	1 : 11
Dams and Water Resources Engineering						
Survey Engineering						

## 5.4 Quality Assurance

### Quality Assurance Unit

Quality assurance as a proposed project submitted by professor Delaware A. Al-Addin, the minister of Higher Education & Scientific Research for upgrading the academic level of high education in Kurdistan Region in the end of 2009.

### Vision

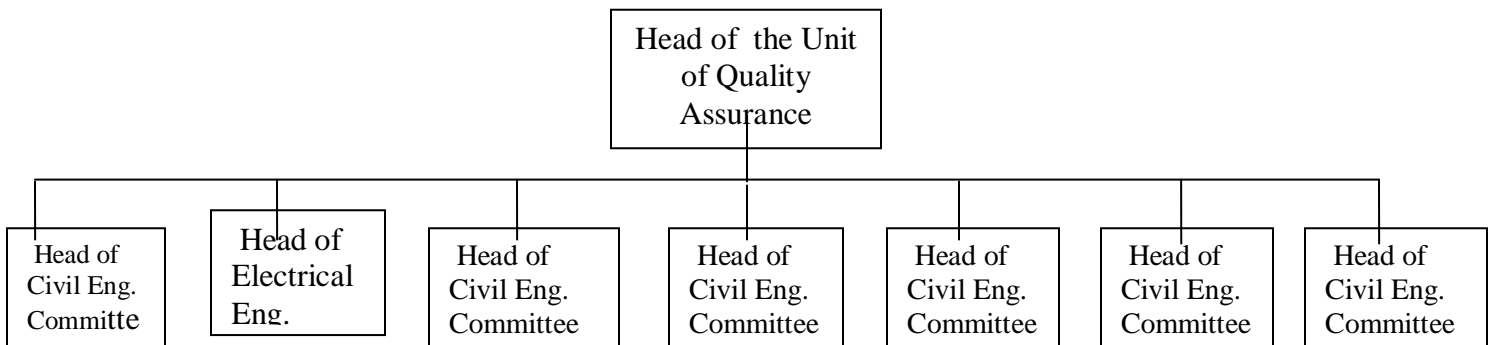
Quality assurance of academic level gained by student.

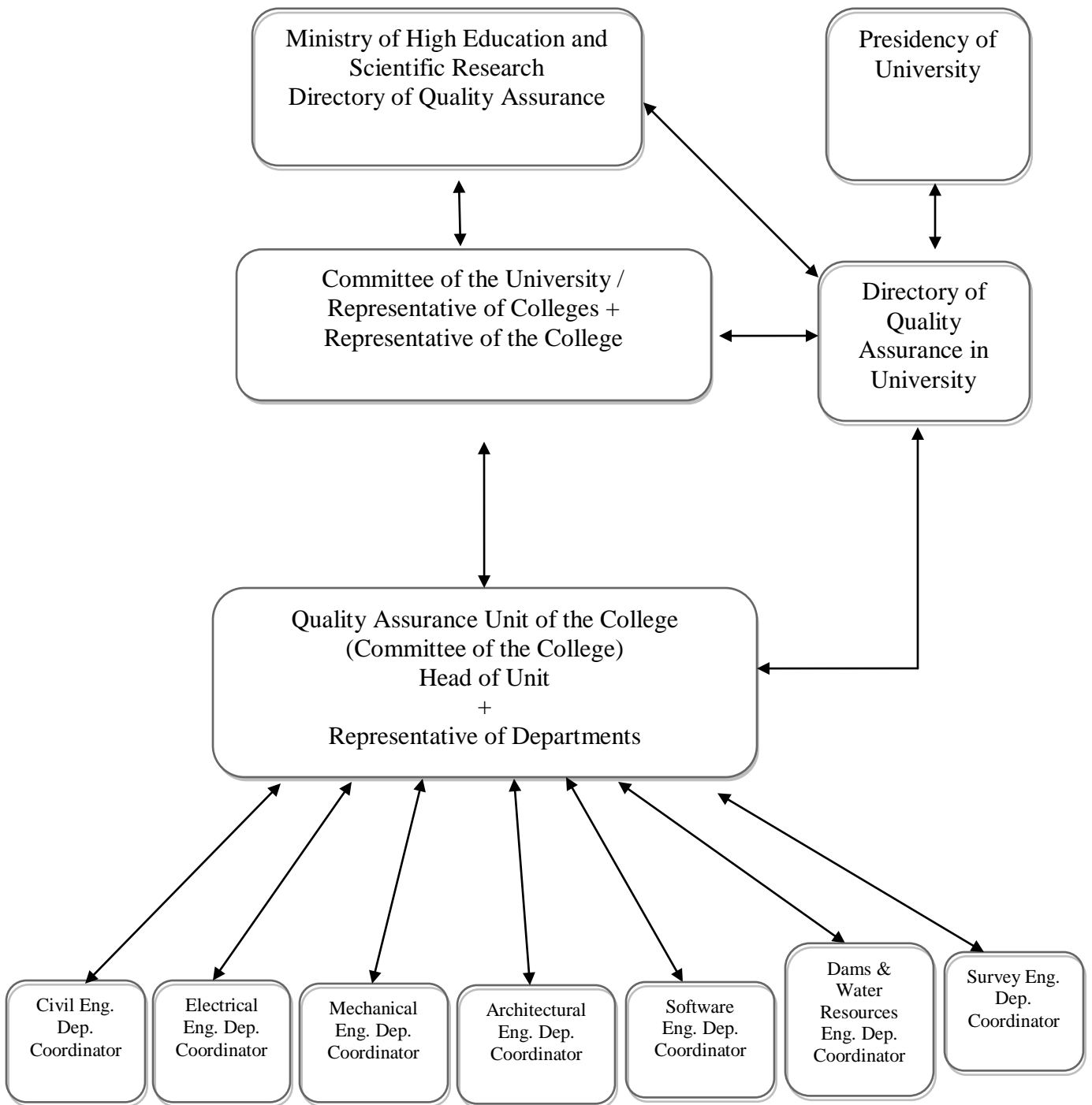
### Objective

Creating an environment making teaching and learning at the level of international universities.

#### 5.4.1 Organization Structure of the Unit

The unit of quality assurance consists of the head of unit and the scientific department committees. The following chart represents the organization structure of Quality Assurance.





**Quality Assurance System in Ministry of Higher Education and Scientific Research**



#### **5.4.2 Duties of Head of the QA- Unit**

- Meeting with head of departments dealing with quality assurance
- Coordinating between department committees and any other agency outside of the college,
- Submitting summarized reports to deanship and sometimes to the office of vice president for scientific affair- directory for quality assurance,

#### **5.4.3 Duties of the Head of QA- Committee Department**

The quality assurance process usually conducted by the committee of departments working as:

- Coordinator between the student and administration of the department for any issues dealing with the subject,
- Supervising in arrangement and preparing course book,
- Follow up emails of students continuously,
- Arranging works by a program and continuing with the head of department and teachers to prevent delays in lectures or vacant.
- Getting the evaluation (Feedback) of students for the subjects and courses.
- Submitting a detailed report to head of the unit at the end of the academic year evaluating management of courses.

#### **5.4.4 Lecturer's duties**

- Preparing subject book, and course book,
- Presenting scientific and detailed lectures enriching it by newest references,
- Arranging the lectures as power points,
- Placing typical questions and solutions of examinations in subject book.
- Advising students how to learn

#### **5.4.5 Feedback of Student for the Subject and Lecture**

The subject and its lecturer is evaluated by the student at the end of the academic year (2 weeks before terminating teaching ) basing on typical questions prepared for this purpose. Following table represents the feedback form.

### Feedback of Student for the Subject and Lecturer

Name of the Subject:	Date:	Year:	Name of Lecture:
Department:	College:	University:	

No	Evaluation Questions	Level (1-5)	Other Comments- Subjective
1	Main visions and goals of the subject were clear?		
2	The content of the subject was useful and related to the main goal of the department?		
3	The subject book was prepared as per required?		
4	The lecturer worked hard during the presentation to analyze principles, contents and important points simply and clearly ?		
5	The lecturer attended at its beginning time and finished the lecture at its specified time ?		
6	During the presentation, the lecturer was behaving softly, appreciatory and quietly ?		
7	The used slides were clear and attractive?		
8	The lecturer let time and tried to answer the questions clearly and detail?		
9	The reading resources were new and consistent with the subject content?		
10	Sum of levels		

#### Levels Evaluation

1- Not good	2-Medium	2- Good	3- Very good	4- Excellent

### Feedback of Student for the Courses

Name of the Subject:	Date:	Year:	Lecturer Name:
Department:	College:	University:	

No.	Evaluation Questions	Level (1-5)	Other Comments-Subjective
1	Main visions and goals of the subject were clear?		
2	The content of the subject was useful and related to the main goal of the department?		
3	The coordinator worked hard in preparing the course book?		
4	The coordinator worked hard in coordinating and conducting the courses?		
5	The lecturers were well selected and expert in their specialists?		
6	The coordinator teacher carefully look to criticizes of students ?		
7	Information on examination manner submitted carefully?		
8	Examination questions was the reflection for course content?		
9	Sums levels		
10	Examples of changes towards development and progress		

#### Levels Evaluation e

1- Not good	2- Medium	3- Good	4- Very good	5- Excellent

#### 5.4.6 Results of Student Feedback

The results of feedback of student for the subject and the lecturer for each department are observed in their self-assessment reports. The overall distribution of scorer will be shown in Table shown below.

### Score distribution (1 to 5)

Score (Range)	Civil Nos.	Electrical Nos.	Mechanical Nos.	Architectural Nos.	Software Nos.	Dams & Water Resources Nos.	Survey Nos.
1-2 (<2)							
2-3							
3-4							
4-5							
<b>Total</b>							

#### 5.4.7 External Assessment and External Assessor

At the end of the academic year, the performance of lecturers for subjects are evaluated. For this purpose an external assessor for each department is assigned considering following conditions:

- Assistant professor or more and preferred to be from international universities.
- Be an active famous lecturer have experiences in his specialist or close to his specialist.
- Have not joined or shared in teaching or management of the course.

#### 5.4.8 Roles of External Assessor

- Evaluation of all program formatting and its content of the course (program year in our college),
- Evaluation of examination process. Sample of answer papers of students is checked to see the scope of coverage of the material,
- Reviewing the Course Book of subjects and checking the conducted (studied) materials,
- Checking the feedbacks of students for subjects and lecturers,
- Evaluating the existing facilities for submitting lectures,
- Discussion with the head of department if required,
- Discussion with the subject lecturer if required,
- Writing the final report including evaluations of all above items.

#### 5.4.9 The External Assessment

After announcing the results of student, external examiners for different departments were called for assessment on 6-7 of July 2011. Each examiner contacted with the committee of quality assurance, examination committee, and head of department. Also they saw all facilities, then wrote their reports and generally have several comments. Some important of these are listed below:

1. Regarding Course Book: according to instructions, there should contain typical examples and solutions. Their evaluations were between Fair to Very Good.
2. According to last instructions of presidency, there were no any referring to check final examination answer books, while according to instructions these must be looked and checked.
3. It is better also to check the subject book and compared with the required syllabus.
4. Regarding the materials of subjects: in some class years, there are overlaps between two different subjects.

5. The subject of computer & programming, some departments need not to take C++ programming language, it is best to take a course of application of computer programs in their specialist.
6. In some department classes, there are some materials that the student cannot realize, so it is better to transfer them to advanced classes.
7. The evaluations were concentrated on the course book, feedback of students, final exam questions and their typical solutions and facilitating for presenting lectures.
8. The range of overall evaluation levels for all items in above 7 was between fair and very good.

## **5.5 The Process of Continuing Education**

Continuing education is also proposed by Professor Delawer the Minister of Higher Education & Scientific Research aimed to upgrade of lecturers scientific level.

### **Vision**

Raise the level of the team and enable them to keep pace with scientific developments and research.

### **Objective**

Encouraging faculty staff to develop their abilities through submitting and attending seminars, making researches, participating conferences, workshops, etc.

#### **5.5.1 Instructions**

- Generally supervised by University Council,
- Following up by directorate for quality assurance,
- Annually, 3 sets of seasonal seminars
  - Autumn ( September to end of December)
  - Winter ( February to end of March)
  - Spring ( April to end of June)
- Announces schedule for Seminars before the start tag and a copy of the table stored in a quality assurance directorate,
- Schedule of seminars must be presented to the Faculty Council for approval. Council must ascertain quality and usefulness of the topic and content of the seminars,
- Some of the seminars devoted to the scientists and academics from outside the university. Number according to ability will be,
- Directorate of quality assurance and units of quality assurance in the college have to:
  - Collecting data and inputting in database ,
  - Issuing certificate of participating,
  - Following up of conducting seminars of colleges and departments.

- Seminars at the college level supervised by the Dean of the College as the first official
- Seminars at the scientific department supervised by the Head of department as the first Official,

- Each faculty staff member has to submit at least one seminar during academic year.
- Other required activities that staff member have to do like: attendance in seminars, workshops, conferences with or without research, publishing papers and/ or book in his specialist, evaluation of reaches and thesis, discussion of thesis, participating in committees (department level, or upper),...etc.
- Each faculty member has to have to collect scores (defined by minimum range) according to scientific grade through his activities

### 5.5.2 Activities of Presenting Seminars in the Departments and the College

Following table shows different activities in departments and the college college

No.	Department Name	Nos. of Seminars presented in department (by Faculty Staff )	Nos. of Seminars presented in department (by External Specialists)	Total
1	Civil Eng.	38	9	47
2	Electrical Eng.	27	1	28
3	Mechanical Eng.	41	1	42
4	Architectural Eng.	25	4	29
5	Software Eng.	11	0	11
6	Dams & Water Resources Eng.	29	3	32
7	Survey Eng. *	3	0	3
	Total (College level)	174	18	192

\*New opened

### 5.5.3 Minimum Required Scores

Following table shows minimum number of score required by each faculty staff .

Scientific Grade	Minimum total number of scores	Minimum number of points (scores) for effective activity*
Professor and Assistant Professor	50	20
Assistant professor (MSc) and lecturer (PhD)	50	20
Assistant lecturer (MSc)	40	10

\*Each activity other than attending a seminar. The number is within the total number.

### 5.5.4 How to calculate scores for Teaching staff

Following table illustrates the instruction

No.	Type of activity	Number of points(scores)	Comments
1	Attendance in a seminar of the department or Item college	1	
2	Submitting of a seminar in the department or college	2	
3	Participating in a scientific conference and .....by a research paper	3	3(hrs) points (scores) per day, travel days not considered

4	Attendance in scientific conferences and ..... (without research paper)	2	2 (hrs)score per day, travel days not considered
5	Published research or accepted for publishing in scientific journal: -local -Aboard (international)	3 4	1 point ( score or (hr)) raised to encourage faculty staff conducting researches
6	Awarding	7	
<b>Authoring of Book</b>			
7	Authoring a book as per university request	7-10	Points(scores) are considered at the date of completing of the book (as per book volume)
	Authoring a book without university request but supported by the scientific committee of the department	5-7	Points(scores) are considered at the date of completing of the book
<b>Translating</b>			
8	Translating based on request of the university	5-7	The same note in item 7
	Authoring a book without university request but supported by the scientific committee of the department	2-3	The same note in item 7
<b>Assessment of research</b>			
9	Assessment of researches for upgrading scientific grade	1	local journals
	Assessment of researches of journals	2	International journals
<b>Supervising of thesis</b>			
10	a. Supervising Diploma thesis	1	Points are considered within discussion(of thesis) academic year
	b. Supervising M Sc. Thesis	2	
	c. Supervising Ph.D. thesis	3	
<b>Discussion of thesis</b>			
11	a. Discussion of Diploma thesis	1	
	b. Discussion of M Sc. Thesis	2	
	c. Discussion of Ph.D .thesis	3	
N o.	Type of activity	Number of points(scores)	Comments
<b>Scientific and linguistic assessment of thesis</b>			
12	a. Diploma thesis	1	
	b. M Sc. Thesis	2	
	c. Ph. D thesis	3	
13	Scientific and linguistic assessment of authoring and translating of book	2	
<b>14 Scientific committees</b>			
	a. Department committees: scientific; graduate; QA	1	
	b. College committees : scientific; graduate; QA	1	
	c. Upgrading committee	2	
	d. Scientific committees in other ministries (permanent and annually)	2	Actually described and approved
	e. External assessor in quality assurance process	2	

### 5.5.5 Performance of Teaching Staff for Academic Year 2010-2011

The performance of staff (teaching staff) will be by consideration of three assessments; the student feedback, the head of department and the scores collected by him of activities during the academic year which are shown in following Tables respectively. The academic year starts at 1<sup>st</sup> of September and ended at August, 31 of the same year.

#### a. Feedback of Students ( Point (score)s Distribution for Subject and Faculty member (Teacher & the subject))

Points Range	Civil Eng. (%)	Electrical Eng. (%)	Mechanical Eng. (%)	Architectural Eng. (%)	Software Eng. (%)	Dams & Water Resources Eng. (%)	Survey Eng. (%)	Total
1- < 2	0	3	0	1	0	1	1	6
2- <3	13	10	8	8	10	7	6	62
3- <4	17	24	16	25	17	12	5	116
4- 5	9	25	9	8	5	13	3	72
Total	39	62	33	42	32	33	15	256

#### b. Assessment of Head of Department for Faculty member (Teacher of the subject)

Points Range	Civil Eng. (%)	Electrical Eng. (%)	Mechanical Eng. (%)	Architectural Eng. (%)	Software Eng. (%)	Dams & Water Resources Eng. (%)	Survey Eng. (%)	Total
1- < 2	1	0	0	0	0	0	0	1
2- <4	1	0	0	1	0	0	0	2
3- <4	1	2	13	0	1	1	0	18
4-5	29	24	14	21	8	13	2	111
	32	26	27	22	9	14	2	132

#### C. Points (scores) collected by Faculty member (from Continuity Education process)

Points Range	Civil Eng. (%)	Electrical Eng. (%)	Mechanical Eng. (%)	Architectural Eng. (%)	Software Eng. (%)	Dams & Water Resources Eng. (%)	Survey Eng. (%)	Total
0 - <20	8	5	4	2	8	3	1	31
20 - <40	13	7	8	12	3	5	0	48
40 - <60	10	9	7	4	1	5	0	36
60 - <80	1	2	3	4	0	2	0	12
80 - <100	1	1	2	1	0	1	0	6
100 - <120	2	2	4	0	0	0	0	8
∑	35	26	28	23	12	16	1	141



## 5.5.6 SWOT- Analysis

### Strengths

- Young and dynamic faculty
  - \* Sufficient number
  - \* Excellent academic backgrounds
- Some departments have adequate number of upgraded,
- Presentation of obligatory seminars within the processes of applying continuous learning and quality assurance.

### Weakness

- Engagement in works other than teaching (like consultant, committees of colleges or university, .....),
- High and unequal workloads as teaching staff and in college level,
- Limited resources for development,

### Opportunities

- Facilitate access to upgrading the degree ( MS.c. to Ph. D),
- Engaging in consulting works via Engineering Consulting Office developing practical performance,
- External community and university relationships:
  - \* interest in academic program expansion,
  - \* interest in university services.
- New construction and technological advances,
- increased focus on higher education,

### Threads

- Difficulty in participating of aboard conferences and trainings,
- unavailability of visitor professionals ( Teaching and/or instructors),
- Prohibition of teaching staff supplementary works in public sectors,

## 6. Laboratories and Academic Facilities

Adequate laboratory and facilities with required equipment must be available for the teaching and learning requirements of the program. Use of facilities and equipment should be monitored and regular assessments of adequacy made through consultations with teaching and other staff and students.

In our college, each department has its own facilities and laboratories. New buildings for electrical, mechanical and dams and water resources departments are constructed in 2010.

Generally equipments in all departments still function properly. New equipments are delivered to civil engineering department, but still not installed.

College of Engineering is built on about 616568 sq. m (surface area) distributed as follows

Facility section	Area (sq. m)
Buildings	65288
Streets and parks	431353
Residential houses (36 units)	102465
Laboratories and workshops	17462
Total area	616568

The site location and other secondary facilities and services are illustrated in Appendix- E1-2.

### 6.1 infrastructure

All department programs are taught in their departments which are provided with furniture, equipments and all required tools.

Summarize each of the program's facilities in terms of their ability to support the attainment of the program's educational objectives and student outcomes and to provide an atmosphere conducive to learning. The adequacy of these facilities to support the scholarly and professional activities of the students and faculty in the program.

Recently, new buildings constructed for Dams and Water Resources, Mechanical and Electrical : departments in addition to expansion of library were as follows:

1. Dams and Water Resource department building area:

$$\begin{array}{r}
 \text{Basement} = 525 \text{ m}^2 \\
 \text{Ground Floor} = 4\,000 \text{ m}^2 \\
 \text{First Floor} = 3\,500 \text{ m}^2 \\
 \hline
 \text{Total} = 8\,025 \text{ m}^2
 \end{array}$$

$$\text{Site Location Area} = 11\,650 \text{ m}^2$$

2. Mechanical Department building area:

$$\begin{array}{r}
 \text{Basement} = 525 \text{ m}^2 \\
 \text{Ground Floor} = 4\,000 \text{ m}^2 \\
 \text{First Floor} = 3\,500 \text{ m}^2 \\
 \hline
 \text{Total} = 8\,025 \text{ m}^2
 \end{array}$$

3. Electrical Department building area:

$$\begin{array}{r}
 \text{Ground Floor} = 1\,480 \text{ m}^2 \\
 \text{First Floor} = 1\,480 \text{ m}^2 \\
 \hline
 \text{Total} = 2\,960 \text{ m}^2
 \end{array}$$

Site Location area = 8400 m<sup>2</sup>

4. The library expansion area = more than 100 m<sup>2</sup>

## 6.2 Classrooms

Classrooms and associated equipment that is typically available where the program courses are taught. Each department has its own classrooms with one for each class group. Regular classrooms are provided with 4-m blackboards, an overhead projector and a screen. The rooms have sufficient lighting and space is adequate for most of the sections. However, some large sections suffer from crowded rooms, making it very difficult to perform in-class tests and quizzes. It is recommended that section size be kept to the acceptable level of 20 or less when 35-seat classrooms are assigned 1.5 to 2.0 m<sup>2</sup>/ student in average.

## 6.3 Library

The main library of the college is built on about 1500 m<sup>2</sup> consisting of book storages, halls and office rooms.

The numbers of the existing references are as follows:

Type of Reference	Number	Remarks
Text Books	12,530	
Auxiliary Books	6282	
Local Thesis	600	
Foreign Journals	300	
Local Journals	50	

## 6.4 Offices

Offices (such as administrative, faculty, clerical, and teaching assistants) and any associated equipment that is typically available there. Each faculty member has a standard size (... x ..) private office.

Most of the professorial rank faculty offices have adequate space, lighting and air conditioning. The average area of most of the office rooms is at least 15 m<sup>2</sup>. Many offices have access to natural lighting. Two lecturer-rank at least often share a single small office.

As far as the office equipment is concerned, it can be assessed as adequate. All offices are furnished with desks, chairs and sufficient bookshelves. Some teaching members are provided with printers.

## 6.5 Laboratories

Most of laboratories are utilized for hands-on student exercises as part of the undergraduate curriculum. Almost all of the engineering laboratories are used by the faculty (teaching staff) for research purposes; a great majority of the laboratories serve a dual purpose and accommodate both research and educational activities. Information on individual labs is provided in all of self- Assessment Reports of departments.

Following table is the main laboratories of each department

<b>Civil Eng. Labs</b>	<b>Electrical Eng.</b>	<b>Mechanical Eng.</b>	<b>Architectural Eng.</b>	<b>Software Eng.</b>	<b>Dams &amp; Water Resources Eng.</b>	<b>Survey Eng.</b>
Building materials- 1 <sup>st</sup> year ( 10 m <sup>2</sup> /student)	Electrical- 1 <sup>st</sup> year (5 m <sup>2</sup> /student)	Carpentry- 1st year (30 m <sup>2</sup> /student)				Health & Environment-2 <sup>nd</sup> year (
Surveying-1sy year (open )	Electrical Workshop- 1 <sup>st</sup> year(13 m <sup>2</sup> /student)	Casting- 1st year (6 m <sup>2</sup> /student)				Highway-3 <sup>rd</sup> year (
Concrete- 2 <sup>nd</sup> year (	Computer- All (5 m <sup>2</sup> /student)	Electrical- 1 <sup>st</sup> (8 m <sup>2</sup> /student)				Hydraulic & Fluid -2nd year
Fluid mechanics- 2 <sup>nd</sup> year (8 m <sup>2</sup> /student)	Open Lab.-All (3.3 m <sup>2</sup> /student)	Lathe machine- 1 <sup>st</sup> year (25 m <sup>2</sup> /student)				Concrete & building Materials-1 <sup>st</sup> and 2 <sup>nd</sup> years (
Highway Eng.- 3 <sup>rd</sup> yea ( 10 m <sup>2</sup> /student)	Internet- All (4.26 m <sup>2</sup> /student)	Milling workshop- 1st year (25 <sup>2</sup> /student)				Structure-PG
Soil mechanics- 3 <sup>rd</sup> year (22 m <sup>2</sup> /student)	Machine- 2nd , 3rd and 4th years (23 m2/student)	Shopping & grinding- 1st year (25 m <sup>2</sup> /student)				Soil- 3rd year (
Water Supply & Sewerage- 4 <sup>th</sup> year ( 35 m <sup>2</sup> /student)	Communication- 2nd and 3rd , and 4th years (5.3 m2/student)	Welding workshop- 1 <sup>st</sup> year (25 m <sup>2</sup> /student)				Computer- 1st and 2nd years (
	Power- 2nd, 3rd and 4th years (9.3 m2/student)	Thermodynamics- 2 <sup>nd</sup> year (6 m <sup>2</sup> /student)				Internet- all (
	High Voltage- 4th year (42 m2/student)					
<b>Civil Eng. Labs</b>	<b>Electrical Eng.</b>	<b>Mechanical Eng.</b>	<b>Architectural Eng.</b>	<b>Software Eng.</b>	<b>Dams &amp; Water Resources Eng.</b>	<b>Survey Eng.</b>
	Microprocessor- 4th year (2.9 m2/student)	Strength of material- 2 <sup>nd</sup> year (8 m <sup>2</sup> /student)				
	Renewable Energy- (4th year (1.8 m2/student)	Fluid mechanics- 2 <sup>nd</sup> year (9 m <sup>2</sup> /student)				
	Electronic-2nd, 3rd and 4th years (2.9 m2/student)	Theory of machine- 3 <sup>rd</sup> year (8 m <sup>2</sup> /student)				
		Head transfer- 3 <sup>rd</sup> year (8 m <sup>2</sup> /student)				
		International combustion engine- 3 <sup>rd</sup> year (8 m <sup>2</sup> /student)				
		Vibration-3 <sup>rd</sup> year				

		(8 m <sup>2</sup> /student)				
		Pipes- 4 <sup>th</sup> year (10 m <sup>2</sup> /student)				
		Air conditioning- 4 <sup>th</sup> year (8 m <sup>2</sup> /student)				
		Power- 4 <sup>th</sup> year (8 m <sup>2</sup> /student)				
		Measurement- 4 <sup>th</sup> year(8 m <sup>2</sup> )				

## 6.6 Equipments

Details of equipments for each department are illustrated in their reports.

## 6.7 Level of Furnishing of Halls and Labs

The halls and labs for all departments are relatively well furnished. offices and halls of three departments, Electrical, Mechanical, and Dams and Water Resources are fully furnished. The cost amounted to about \$1,250,000. Generally the equipment states are;

- Most of the existing labs have sufficient space.
- Most of the existing labs are self-sufficient for the purpose of lab sessions for various courses that are
- linked to and are also accessible to faculty for research purposes.
- Some existing labs are under continuous development.
- Some existing labs need to upgrade their equipment and/or instruments.

## 6.8 Playing Yard

There is an open fenced playing yard of about 2,200 m<sup>2</sup> (= 40 m x 55 m).

The overall class rooms, halls, labs are shown its summary in Appendix B

## 6.9 SWOT- Analysis

### Strength

- New buildings and expansions and fully furnished,
- A well structured laboratory experience
- Relatively well equipped laboratory, library and IT Facilities
- Purchasing new equipments for some departments

### Weakness

- Most of department equipments are depreciated,

### Opportunities

- Utilizing labs for testing construction material for returning,

## Threads

-Difficulty in approving amounts for repairing, renewing and maintenance,

## 7. Financial Support

The outstanding support and financial resources that are made available to the college for attracting and maintaining high quality faculty and providing means of scholarly development are manifested by the following:

### 7.1 Expenditures

Table below shows the annual expenditure of the 1 teaching and research activities during the last year (2010) and part of this year

Type of Expenditures	Amount ID (US Dollars)	%
Salaries of teaching staff	4, 615, 000,000 (384,458)	42
Salaries of engineers and technicians	2,574,000,000 ( 2,145,000 )	23.4
Admin and services	1,455,000,000 ( 1,212,500 )	13.2
Research and publishing	56,000,000 ( 46,667 )	0.51
Purchasing equipments for Civil Eng. Dep.	240,000,000 (2,000,000)	2.18
Purchasing equipments for Survey Dep.	900,000,000 (750,000)	8.2
Wages of supplementary lectures	80,000,000 (66,667)	0.72
Admin requirement and services	307,000,000 (256,250)	2.8
Student allocation (out of Erbil)	735,000,000 (612,500)	6.7
Rewards	20,000,000 (16,667)	0.18
Total	1.0982 x 10 <sup>10</sup>	100

Other expenditures are those utilized in constructing buildings for departments of Electrical, Mechanical, and Dams and Water Resources with furnishing and finally expanding the library as

shown in Table below.

Table 8.2 Expenditures on developing Facilities

Type of Expenditures	Amount ID (US Dollars)	Comments
Electrical Department building construction	1, 850, 000, 000	
Mechanical Department building construction	3, 300, 000, 000	
Dams and Water Resources Department building construction	3, 500, 000, 000,	
Furnishing Electrical, Mechanical and Dams & water Resources	1,480,000,000 (1,233,000)	
Library expansion		

## 7.2 Revenues

The source of these revenues is through Engineering Consulting Office. Designing of projects, testing materials, consulting..etc. are conducted by professionals of teaching staff for agreed cost. The revenues during last two years was as follows:

Year 2009 amounted to \$106,169

Year 2010 amounted to \$187,064

-----  
Total = \$269,359

The role of Engineering Consulting Bureau is explained in following section.

## 7.3 Engineering Consulting Bureau

Engineering Consulting Bureau (ECB) is one of the most active establishment of college of engineering, university of salahaddin-Hawler. It participates in different engineering consultancy with most of the administration and construction departments inside and outside Hawler city in special and in Kurdistan region in general. The ECB has many engineering specialization experts in different branch's such as: Civil Engineering(Structures, Highways, Hydraulics, Soil Mechanics and Foundation, Water Supply and Sewerage,...) Electrical and Power Engineering, Mechanical Engineering, Architectural Engineering, Software Engineering. The (ECB) cooperates in a very active and scientific manner in all design, supervision, consultancy for finding solution for the difficulties that face many projects during construction in site, performing site and laboratory investigations and all construction materials specially soil investigations. Since its establishment in 1979, the ECB had cooperated with the directory of buildings in the university for progressing the constructions belonging to different colleges.

### 7.3.1 Organization Structure

Oversee the Office of the Council consists of:

1. Dean or one of the heads of Departments who are not under the rank of assistant professor of science for the university or college or center and teacher for the Institute, nominated by the University Council or the Council of Technical Education or the Council of the Centre, to be coupled with approval of the Minister. President
2. Four of the teachers in the least selected by the University Council or the education or technical institute or center, each of whom represents the field of competence, and the highest ranking available scientific, that combined with the approval of university president

### 7.3.2 Some authorities of the Board office

The Board office has certain authorities, like:

1. Decision of the annual budget for the Office of the angel and the annual plan.
2. Approval of the contract or extended.
3. Approval to pay the amounts to implement projects or contract work within them and the total cost not to exceed the proportion (80%) eighty percent of the total value of those contracts

### **7.3.3 Main works conducted by the Consulting office during year 2009-2010**

1. Soil testing of projects (in and out of Erbil Governorate ) for 5 projects,
2. Consulting solution for one project,
3. Conducting Load Test for 5 projects,
4. Design of 2 dam projects,
5. Testing enormous construction materials (concrete cubes, cement, steel, ...etc.)
6. Testing of electrical materials and tools of projects,
7. Supervising of executing of 1000 housing unit for faculty staff,
8. Several solution of problem through visiting the project site and submitting reports , and
9. Testing of soil, tools and materials for the project of Erbil Castle renovation.





## APPENDIX A2

### Year 2009/2010

Class	Number (% of passes)						
	Civil Eng.	Electrical Eng	Mechanical Eng.	Architectural Eng.	Software Eng.	Dams & Water Resources Eng.	Survey Eng.
<b>1<sup>st</sup> year</b>	90 (60%)	81 (86%)	77 (58%)	70.6%	47 (67%)	44 (82%)	92%
<b>2<sup>nd</sup> year</b>	95 (76%)	53 (68%)	58 (69%)	67.6%	62 (83%)	51 (92)	-
<b>3<sup>rd</sup> year</b>	137(61%)	64 (75%)	65 (75%)	71.9%	57 (89%)	41 (87)	-
<b>4<sup>th</sup> year</b>	170(79%)	72 (94%)	84 (94%)	87.7%	65 (84)	30 (93)	-
<b>5<sup>th</sup> Year</b>	-	-	-	94.44	-	-	-

### Year 2010-2011

Class	Number (% of passes)						
	Civil Eng.	Electrical Eng	Mechanical Eng.	Architectural Eng.	Software Eng.	Dams & Water Resources Eng.	Survey Eng.
<b>1<sup>st</sup> year</b>	115 (60%)	82	73 (89%)	36.11%	43 (71%)		87%
<b>2<sup>nd</sup> year</b>	95 (84%)	85	67 (91%)	36.59%	55 (96%)		87%
<b>3<sup>rd</sup> year</b>	110 (65%)	49	60 (87%)	64.1%	63 (93%)		
<b>4<sup>th</sup> year</b>	134 (95%)	54	63 (98%)	72.88%	61 (95%)		
<b>5<sup>th</sup> Year</b>	-	-	-				

## APPENDEX B1

### Out comes (a to k) versus Subjects for Civil Engineering Department

#### First Year:

Code	Subject	a	b	c	d	e	f	g	H	i	j	k
CE101	Engineering Mechanics	x	x	x	x	x						
CE102	Mathematics – I	x										
CE103	Computer and Programming	x	x		x	x		x				x
CE104	Engineering Drawing and Descriptive Geometry	x	x					x				x
CE105	Building Materials and Testing	x	x	x		x		x			x	x
CE106	Engineering Geology	x	x	x	x	x						
CE107	Kurdology							x				
CE108	Technical English							x				
CE109	Scientific Debate						x					

#### Second Year:

Code	Subject	a	b	c	d	e	f	g	H	i	j	k
CE201	Mathematics – II	x										
CE202	Surveying	x		x								
CE203	Mechanics of Materials	x		x		x			X			
CE204	Fluid Mechanics	x	x	x	x							
CE205	Concerte Technology	x				x						
CE206	Computer Programming & Numerical Methods	x		x	x							
CE207	Building Construction		x			x		x				x
CE208	Environmental Engineering	x		x		x						
CE209	Engineering Statistics	x		x	x	x						x

#### Third Year:

Code	Subject	a	b	c	d	e	f	g	H	i	j	k
CE301	Structures Analyses	x		x								
CE302	Reinforced Concrete	x				x						
CE303	Soil Mechanics	x	x	x								x
CE304	Highway Engineering	x		x	x	x						
CE305	Engineering Analysis	x		x	x							x
CE306	Irrigation and Drainage	x		x								x
CE307	Engineering Management & Economics	x	x	x	x					x		x
CE308	Hydrology	x		x								x

#### Fourth Year:

Code	Subject	a	b	c	d	e	f	g	H	i	j	k
CE401	Reinforced Concrete Structural Design	x		x		x						
CE402	Foundation Engineering	x		x		x						x
CE403	Water Supply and Sewerage	x		x								x
CE404	Steel Design	x		x		x						x
CE405	Hydraulic Structures	x		x								x
CE406	Methods of construction & Estimation	x		x		x	x		X			x
CE407	Traffic Engineering	x		x		x	x		X		x	x
CE408	Engineering Projects	x	x	x	x	x	x	x	X	x	x	x
CE409	Civil Drawings	x	x					x				x

## APPENDIX B2

### 1. Alumina Survey

Description	Total No. of Respondents = 38	Excellent	Sufficient	Poor
	Subjects	%	%	%
1. The program of study at the Civil Eng. Department of Salahaddin University is designed to address several aspects. How would you assess the coverage of the following in the CE program?	1. Mathematic & Science skills	16	42	42
	2. Civil Engineering skills	21	47	32
	3. Collecting & analyzing data	21	47	32
	4. Ability to link theory to practice	11	55	34
	5. Design ability	13	55	32
	6. Computer knowledge	8	58	34
	7. Oral communication	8	42	50
	8. Report writing	13	53	34
	9. Presentation skills	8	42	50
	10. Ability to work in team	8	45	47
	11. Leadership	5	50	45
	12. Initiation of new ideals	8	58	34
	13. Appreciation of ethical values	8	53	49
	14. Time management skills	13	45	42
2. Do you think it is better for the CE students at Civil Eng. Department to be specialized in a specific area of Civil Engineering?	Yes: 95%			
	NO: 5%			
3. Which of the following specialty areas best describes the nature of work you are currently involved? Please tick more than one as appropriate:	1. Structures Analysis	40%		
	2. Reinforced Concrete	63%		
	3. Soil Mechanics	53%		
	4. Foundation Engineering	61%		
	5. Traffic Engineering	34%		
	6. Methods of Construction & Estimation	40%		
	7. Water Supply and Sewerage	26%		
	8. Civil Drawings	37%		
	9. Eng. Economy and Management	37%		
	10. Environmental Engineering	8%		
	11. Computer and Programming	55%		
	12. Building Materials	37%		
	13. Concrete Technology	42%		

## 2. Employer Survey

	Excellent	Very good	Good	Fair	Poor
<b>1. Knowledge:</b>	%	%	%	%	%
1.1 Mathematics and Science skills		9	80	6	5
1.2 Civil Engineering skills	1	5	12	49	33
1.3 Problem formulation and solving skills		10	29	51	10
1.4 Collecting and analyzing data		7	17	48	28
1.5 Ability to link theory to practice		6	21	33	40
1.6 Design ability	1	6	12	21	60
1.7 Computer skills	1	3	79	10	6
<b>2. Communication Skills:</b>					
2.1 Oral communications	1	34	39	16	10
2.2 Report writing		10	40	35	15
2.3 Presentation skills		5	16	30	49
<b>3. Interpersonal Skills:</b>					
3.1 Ability to work in teams	1	37	37	17	8
3.2 Leadership	1	5	12	23	59
3.3 Creative thinking	1	9	34	39	17
3.4 Appreciation of ethical values	1	9	52	24	13
3.5 Degree of motivation	1	7	42	34	16
<b>4. Work Skills:</b>					
4.1 Time management skills	1	9	21	34	35
4.2 Decision making/problem solving ability	2	4	26	38	30
4.3 Discipline	1	5	28	32	34
4.4 Industriousness		28	31	29	12
4.5 Safety awareness	1	32	27	27	13

## APPENDIX C

### Over all Summary of Department Facilities

Type of Facility	Capacity of the Departments						
	Civil Eng.	Electrical Eng.	Mechanical Eng.	Architectural Eng.	Software Eng.	Dams & Water Resources Eng.	Survey Eng.
General Hall	3 (3500 m <sup>2</sup> )	2 Halls of 330 and 280 seats	2 ( for 285 students)			2 ( for 285 students)	1 (10x10m)
Class Rooms	18 (1000 m <sup>2</sup> )	12 (of 440 m <sup>2</sup> for 215 students)	12 (6x10m each)	4 ( for 180 students)	6 ( 6x 10 m each)	12 (6x10m each)	4 (5x7 m)
Academic Office Rooms	10 (200 m <sup>2</sup> )	12 ( 12 m <sup>2</sup> each)	20 (5x7m av. Each)		8 (3x4m)	12 ( 12 m <sup>2</sup> each)	8 (3.5x8 m each)
Drawing Rooms	2 (30 boards each)		2 (25 boards each)	6 (170 boards)		2 (25 boards each)	
Library	1 (30 m <sup>2</sup> )	1 (40 m <sup>2</sup> )	1 (15x15m)	1 ( 7x14 m)	1 (6x15 m)	1 (40 m <sup>2</sup> )	2 (4x6 m each)
Labs	7 (3500 m <sup>2</sup> )	7 (2031 m <sup>2</sup> for 248 students)	15 (8x10m each)	1 ( for 30 students)	3 (12x25 m)	884 m <sup>2</sup> For 145 students	4 (5x7 m each)
Workshops			4 (20x30 m each at least)				
Cafeteria	1 (40 m <sup>2</sup> )	2 (7x8 m each)	2 (90 m <sup>2</sup> )	1 ( 6x6 m)	1 (6x6m)	2 (90 m <sup>2</sup> )	1 (6x7 m)
Stores		2 (4x6 each)		4 ( 3x3 m each)			3 (3.5x6 m each)
Corridors	About 10% of total	About 20% of total area	30% of total area	Abut 15-20 % of total area	About 20% of total area	30% of total area	About 10% of total area

