Ministry of Higher Eduacation & Scientific Research
The university of Baghdad
College of Engineering
Department of Chemical Engineering

Self Assessment

Of

Chemical Engineeering Program

2020

Contact Information

Name: Assist. Prof. Dr. Raghad F. Almilly **(**Head of Dpartment of Chemical Engineering)

E-Mail raghad.fareed@coeng.uobaghdad.edu.iq
Mobile No.: 07904742153

Name: Assist. Prof. Dr. Mahmood K. Hummadi

E-Mail m.hummadi@coeng.uobaghdad.edu.iq

Mobile No.: 07719069201

1.1 Program History

The scientific knowledge base has witnessed a significant expansion and technical development in all its fields. As it has become with it the need for educational institutions to plan to provide the requirements for the creation of specialized departments or branches in a specific field in order to know all the details related to the field of specialization so that the graduate is qualified scientifically accurately and possesses a solid scientific base with integrated aspects that enable him to efficiently perform his work, creativity and continue scientific research in His field of specialization. The Department of Chemical Engineering is one of the important departments in the College of Engineering - the University of Baghdad due to its close association with the development of industry in various fields, especially in the field of oil, gas, petrochemical, pharmaceutical, food, plastic and ceramic industries, fertilizers, detergents, dyes, batteries, environmental decontamination operations, water treatment ... etc. The Department of Chemical Engineering is also a basis for study in other engineering disciplines such as nuclear engineering, energy engineering, environmental engineering, genetic engineering, medical engineering, and biochemistry. And the department's mission is determined by the numbers of a specialized engineering cadre that advances the scientific and industrial movement and all its institutions, devices, and curricula to the level of the scientific, technical and technological era and makes it truly capable of meeting and covering all the country's needs in these areas and achieving harmony and integration between the goals of the scientific movement and the general plans of Iraq in facilities and industrial activities and diversifying studies and research In light of the reconstruction and development projects that Iraq is currently witnessing, and according to the successive discoveries and the rapid progress of science and technology, and the preparation of a generation strong in its structure, personality and morals, proud of its loyalty to its homeland and armed with the scientific, technical and technological achievements. It also knows how to use and develop it in order to build a better future for Iraq. The task of the department is to prepare scientists, thinkers, university professors, teachers, experts, and specialists to dictate educational, technical, and scientific frameworks with worthy national competencies in all state facilities with competence and work to achieve balanced development constantly between the progress of theoretical sciences and what it requires. This is from the expansion and development of science, experiments, and applied and laboratory practices, and directing faculty members to update the content of teaching subjects. And make it in harmony with what is going on in the modern era, thus taking care of scientific research, nurturing, encouraging, and supporting creativity and innovation talents, and working to provide technical and material reasons that help researchers, creators, and inventors to follow their mission with confidence and confidence.

Chemical engineering found the existence of process factories and that its history dates back to the fermentation and evaporation processes, as the processes developed to larger scales, manufacturing processes and their functions in the second half of the nineteenth

century during the development process that occurred in that period and solved problems related to the design and operation of some chemical plants for continuous production. The term engineering was used Chemical engineering for the first time in 1900 and in 1901 the British scientist George E. wrote the first book on chemical engineering.

The Department of Chemical Engineering was established at the University of Baghdad in 1959, and it was the first department in Iraqi universities, where the first course of chemical engineers graduated in 1963. . From time to time, the department council studies its curricula to follow up on developments in the field of its industrial applications, and in its curricula it has always adopted the scientific foundations in these specializations and adapting them to the development of industrial chemical technology in the country, which was the basis from which the advanced vocabulary of higher studies was emitted.

Postgraduate studies began in the Department of Chemical Engineering in the academic year 1973-1974 to study and award a master's degree. At the same time expanding the theoretical scientific horizon of the field of chemical engineering. In the academic year 1985 - 1986, the department approved the opening of the study for the doctoral degree, and students were accepted for the first session, and the scientific issues were determined for their thesis based on the need of industrial establishments. Scientific and in response to the advancement of the scientific level in the direction of providing advanced scientific cadres. The Department of Chemical Engineering believes that the importance of the study in it is due to its close association with the movement of industry development in various fields. Thus, one of the department’s goals is to care and follow up the scientific and educational trend of the department and its development in order to achieve harmony and integration with the scientific activity And in the direction of expanding and strengthening cooperation with scientific institutions around the world, encouraging the dispatch of scientific missions and encouraging the giving of scholarships and study licenses in accordance with the current and prospective needs of various industrial and research facilities of competence in Iraq, and the introduction of information systems in the field of chemical engineering specialization in order to achieve the development of curricula and research methods to raise them to international levels as well Linking the journal of chemical engineering on the Internet in order to communicate with the latest developments in research and technology in the world and to constantly supply the newly established universities and colleges with specializations with graduate degree holders to be a nucleus for faculty members and researchers in those institutions and to conduct scientific research aimed at expanding the scope of cooperation between universities and serving reconstruction and investment plans In the industrial fields, in addition to providing direct scientific and technical advice in specialized advisory offices and centers.

1. Options

The program offers bachelor’s degree in Chemical Engineering.

1.2 Program Delivery Modes

The initial certificate is obtained after passing the four academic stages prepared for the implementation of the study program by attending lectures, class participation, preparing laboratory reports, etc., participating in summer training programs, and succeeding in the various exams that take place throughout the academic year and designed for each program and for each scientific subject. And all this takes place within the morning study, starting from the 8:30 am up to 2:30

1.3 Program Locations

The program is completely offered in the University Of Baghdad-College of Engineering-Department of chemical engineering.

1.4 Public Disclosure

The approved means by which the annual registration and graduation data are published, along with various other information of interest to the faculty or students, are the official websites of the institution, College of Engineering or University of Baghdad https://coeng.uobaghdad.edu.iq/

1.5 Previous Evaluations and the Actions Taken (if applicable)

This is the first evaluation by the Iraqi Council of Accreditation for Engineering Education evaluation team.

2 ACCREDIATION CRITERIA

2.1 Criterion 1: Program Education Objectives

2.1.1 Strategic Planning

Vision:

The program should be a pioneer and innovator at the national level in teaching students in undergraduate and graduate studies in the field of engineering of Chemical Engineering. Graduates will gain the knowledge that will enable them to move ahead with industry development, government service, academic work and community service.

Mission:

The program of Chemical Engineering is dedicated to providing the country with specialists for a broad base of Chemical-related materials through the development and application of our core competencies, which include education, research, analysis, design, synthesis and performance testing. The objective of both this academic and research functions is the practical application of scientific and engineering principles to generate units and processing concepts and enhance technical problem solving capabilities related to the production.

2.1.2 Statement of PEOs

The program educational **objectives** of the Chemical Engineering are:

Objective 1. The program aims to graduate an engineer with the ability to design chemical industrial units for various oil and food industries, as well as renewable energy.

Objective 2. The program aims to graduate an engineer with the ability to diagnose some industrial problems and find optimal solutions to them.

Objective 3. The program aims to graduate an engineer with the ability to follow up the quality control of the chemicals produced.

Objective 4. The program aims to graduate an engineer capable of producing materials with precise specifications for special applications from available and environmentally friendly raw materials.

2.1.3 PEOs Consistency with the Mission Statement

1- Program Educational Objectives 1 and 2 is consistent with the mission of meeting high standards of student success by providing access to a learner-centered, high quality educational program.
2- Program Educational Objectives 3 provides the first step towards a career of achievement and service. The needed background of knowledge and skills are taken to attain this aim. Students acquire quality education through various avenues, including knowledge, accomplishments and values as reflected in the Program Educational Objectives 1. The professional and ethical matters are also conserved.
3- Program Educational Objective 4 is consistent with the mission of producing graduates that are prepared for advanced education and life-long learning and therefore capable of engaging in the process of research and scientific discovery for the benefit of local, regional and global communities.

2.1.4 Program Constituencies

The main constituencies of Chemical Engineering program are:

- Students
- Faculty
- Alumni

The constituencies and their relationships to the program are described below:

I. ***Students:***

Students have a clear interest in having a broad knowledge of the program related principles, tools, and theories as this prepares them for related careers, and helps them secure jobs locally and abroad. The importance of student engagement is reiterated in student forums discussions, the course surveys and the alumni surveys.

II. ***Faculty:***

Faculty strive toward graduating students who are technically capable; have an understanding of the ethical and social dimensions in the program; capable of life-long learning, and who can work in teams. Such traits would elevate the program status and improve its reputation locally, regionally, and internationally. The Division works with course coordinators in order to review courses and ensure that they are aligned with the program outcomes, which in turn contribute to the program's objectives.

III. ***Alumni:***

Alumni are clearly influenced by the Department's reputation, as this would help them advance their careers. They frequently contact faculty for recruitment purposes. Finally, the Department regularly surveys alumni in order to confirm that the objectives are in line with current trends.

2.1.5 PEOs Review Process

The program educational objectives of the Chemical Engineering department had been reviewed before by doing many of Self-Assessment Reports.

2.2 Criterion 2: Graduate outcomes

2.2.1 Adopted Graduate Outcomes

i) An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science and mathematics.

ii) An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and synthesis in the design process.

iii) An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize engineering judgment to make inferences.

iv) An ability to skillfully communicate orally with a gathering of people and in writing with various managerial levels.

v) An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments taking into account the consequences in worldwide financial, ecological and societal considerations.

vi) An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble and apply it properly.
vii) An ability to work adequately on teams and to set up objectives, plan activities, meet due dates, and manage risk and uncertainty

2.2.2 Relating GOs to PEOs

The **Graduate** program outcomes are designed to lead to the achievement of the program educational objectives. The **Graduate** outcomes are related to the program educational objectives as shown in Table 2-1.

Table 2-1: Correlation between program educational objectives and program outcomes

Program Outcome	Objective 1	Objective 2	Objective 3	Objective 4
Outcome i			√	
Outcome ii	√	√	√	
Outcome iii		√	√	
Outcome iv			√	√
Outcome v		√	√	√
Outcome vi	√	√	√	√
Outcome vii	√	√		√

2.3Criterion 3: Curriculum

Criterion 3: Curriculum

Program Structure and Content
Study Plan

Table 3-1 Curriculum

Chemical Engineering program

Course (Department, Number, Title) List all courses in the program by term starting with the first term of the first year and ending with the last term of the final year.	Indicate Whether Course is Required, Elective or a Selected Elective by an R, an E or an SE.[1]	*Subject Area (Credit Hours)*				Last Two Terms the Course was Offered: Year and Semester, or Quarter
		Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other	
First Class Year						
CH 121 Mathematics I	R	2		1		2020-2021
CH 122 Organic Chemistry	R		2			2020-2021
CH 123 Analysis Chemistry	R		2			2020-2021
CH 131 Engineering Drawing	R		2			2020-2021
CH 144 Chem. Eng. princibles	R		2			2020-2021
English	R					2020-2021
CH 142 Computer programming	R	2		1		2020-2021
Workshop	R					

Human Rights	R			1		
	R					2020-2021
Second class						
CHE 212 Mathematics II	R	2				2020-2021
CHE 234 pollution	R					2020-2021
CHE 214 Fluid Flow	R		2			2020-2021
CHE 242 Physical Chemistry	R		2			2020-2021
CHE 222 Computer programming	R	2	2			2020-2021
CHE 232 Properties of Eng. Materials	R					2020-2021
CHE 244 Chem. Eng. Principles	R		2			2020-2021
CHE 213 Statics and Economy	R		2			2020-2021
DEmocry and Public liberties	R			1		2020-2021
Third class						
CHE 313 Eng. Analysis	R	3				2020-2021
CHE 324 Mass Transfer	R					2020-2021
CHE 323 Heat Transfer	R					2020-2021
CHE 321 Numerical Methods	R	3				2020-2021
CHE 344 Reactor design	R		3(√)			2020-2021
CHE 314	R					2020-2021

Thermodynamic						
Ch. En. Lab I	R					2020-2021
CHE 311 Industrial Management	R					2020-2021
Fourth class						
CHE 442 Ind. & Petro	R					2020-2021
CHE 424 Process Dynamic and control	R					2020-2021
CHE 423 Design	R		3(√)			2020-2021
CHE 414 Units operations	R					2020-2021
CHE 474 Ch. En. Lab I	R					2020-2021
CHE 426 Project	R					2020-2021
CHE 446 Computer Applications In Chem. Eng.	R	3				2020-2021
CH434 Petroleum Refining						2020-2021

Alignment with PEOs: Description of how the curriculum aligns with the program educational objectives is shown in table

Table 3.2 Curriculum alignment with the program educational objectives.

Subject (Department, Number, Title)	Objective 1	Objective 2	Objective 3	Objective 4
First Class Year				
CH 121 Mathematics I	√	√		√
CH 122 Organic Chemistry	√		√	√
CH 123 Analysis Chemistry	√	√	√	
CH 131 Engineering Drawing	√		√	
CH 144 Chem. Eng. princibles		√	√	
English				
CH 142 Computer programming	√		√	√
Workshop	√	√		√
Human Rights				
Second class				
CHE 212 Mathematics II	√	√	√	√
CHE 234 pollution	√	√	√	
CHE 214 Fluid Flow	√		√	
CHE 242 Physical Chemistry	√		√	
CHE 222 Computer programming		√		
CHE 232 Properties of Eng. Materials	√		√	√
CHE 244 Chem. Eng. Principles	√	√	√	√
CHE 213 Statics and Economy	√			√
DEmocry and Public liberties				
Third class				
CHE 313 Eng. Analysis	√	√		
CHE 324 Mass Transfer	√	√		

CHE 323 Heat Transfer	√	√	√	√
CHE 321 Numerical Methods	√	√		
CHE 344 Reactor design	√	√	√	
CHE 314 Thermodynamic	√	√		
Ch. En. Lab I	√	√	√	√
CHE 311 Industrial Management	√	√		√
Fourth class				
CHE 442 Ind. & Petro	√	√	√	
CHE 424 Process Dynamic and control	√		√	
CHE 423 Design	√	√		
CHE 414 Units operations	√	√		√
CHE 474 Ch. En. Lab I	√		√	
CHE 426 Project		√	√	√
CHE 446 Computer Applications In Chem. Eng.	√		√	
CH434 Petroleum Refining	√	√		

First Class

Code	Weekly hours			Units
	*Th	P	T	
CH 121 Mathematics I	2	1	0	4
CH 122 Organic Chemistry	2	2	0	6
CH 123 Analysis Chemistry	0	3	0	6
CH 131 Engineering Drawing	0	4	0	2
CH 144 Chem. Eng. princibles	2	0	1	4
English	2	0	0	2
CH 142 Computer programming	2	0	0	2
Workshop	1	0	0	1
Human Rights				2
No. of Weekly hours	11	10	2	
Total	23			29

Second Class

Code Subject	Weekly hours			Units
	*Th	P	T	
CHE 212 Mathematics II	2	1	0	4
CHE 234 pollution	2	2	0	4
CHE 214 Fluid Flow	0	3	0	5
CHE 242 Physical Chemistry	0	4	0	8
CHE 222 Computer programming	2	0	1	6
CHE 232 Properties of Eng. Materials	2	0	1	7
CHE 244 Chem. Eng. Principles	2	0	1	6
CHE 213 Statics and Economy	1	0	0	1
Democry and Public liberties				2
No. of Weekly hours	11	10	2	
Total	24			34

Third Class

Code Subject	Weekly hours			Units
	*Th	P	T	
CHE 313 Eng. Analysis	2	1	0	4
CHE 324 Mass Transfer	2	2	0	4
CHE 323 Heat Transfer	0	3	0	4
CHE 321 Numerical Methods	0	4	0	4
CHE 344 Reactor design	2	0	1	6
CHE 314 Thermodynamic	2	0	1	4
Ch. En. Lab I	2	0	0	4
CHE 311 Industrial Management	1	0	0	4
No. of Weekly hours	11	10	2	
Total	23			34

Fourth Class

Code Subject	Weekly hours			Units
	*Th	P	T	
CHE 442 Ind. & Petro	2	1	0	4
CHE 424 Process Dynamic and control	2	2	0	4
CHE 423 Design	0	3	0	4
CHE 414 Units operations	0	4	0	4
CHE 474 Ch. En. Lab I	2	0	1	3
CHE 426 Project	2	0	1	4
CHE 446 Computer Applications In Chem. Eng.	2	0	0	6
CH434 Petroleum Refining	1	0	0	2
CHE 442 Ind. & Petro				
No. of Weekly hours	11	10	2	
Total	23			31

2.4 Criterion 4: Continuous Improvement

Show the extent to which the graduate outcomes are being attained and describe the processes for regularly assessing and evaluating the extent to which they are being attained and how the results of these processes are utilized to affect continuous improvement of the program. It is recommended that this section include the followings (a table may be used to present this information):

2.4.1 Achievement of Graduate outcomes

2.4.1.1 Assessment Processes

A listing and description of the assessment processes used to gather the data upon which the evaluation of each student outcome is based. Examples of data collection processes may include, but are not limited to, specific exam questions, student portfolios, internally developed assessment exams, senior project presentations, nationally-normed exams (if any), oral exams, focus groups, industrial advisory committee meetings, or other processes that are relevant and appropriate to the program.

2.4.1.2 Frequency of Assessment Processes

Describe the frequency with which these assessment processes are carried out.

2.4.1.3 Expected Level of Attainment

Describe the expected level of attainment for each of the student outcomes.

2.4.1.4 Results of Evaluation and Analysis

Summarize the results of the evaluation process showing an analysis illustrating the extent to which each of the graduate outcomes is being attained.

2.4.1.5 Documentation

Describe how the assessment processes and results are being documented and maintained.

2.4.2 Actions for Continuous Improvement

2.4.2.1 Systematic Data Utilization in Continuous Improvement

Describe how the results of evaluation processes for the graduate outcomes and any other available information are systematically used as input in the continuous improvement of the program.

2.4.2.2 Re-assessment of Changes Results

Describe how the results of any changes are subjected to re-assessment to find whether effective or not.

2.4.2.3 Future Plans

Indicate any significant future program improvement plans based upon recent evaluations.

2.4.2.4 Brief Rationale of Planned Changes

Provide a brief rationale for each of the planned changes.

2.4.2.5 Quality Management System Documentation

Copies of any of the assessment instruments or materials referenced in above must be available for review at the time of the campus visit. Other information such as minutes from meetings where the assessment results were evaluated and where recommendations for action were made, are also included.

2.5 Criterion 5: Students

2.5.1 Student Admission

An applicant for admission to an undergraduate Chemical Engineering Program / University of Baghdad must satisfy the following minimum requirements:

1. He / She should have an Iraqi secondary school certificate, or its equivalent, and majored in natural or technological sciences.
2. Acceptance is centrally controlled by the Ministry of Higher Education and Scientific Research.
3. Distribution of students to the 12 engineering department of the university, including the Chemical Engineering Department, is made according to the capacity plan of the departments and the rating average of the applicants and their desires. The capacity plan of the chemical Engineering Department in the last three years was 40-75 students.
4. Also included a plan to accept the top students from Technical Institutes Foundation, and the outstanding employees from state institutions and ministries.
5. The applicant must submit the required documents within a specified period.
6. An applicant who has graduated from a high school system outside Iraq must have completed twelve years of combined elementary and high school studies from a recognized school. He is also required to provide an equivalency certificate from the Iraqi Ministry of Education.

	Years				
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Students studying for a full academic period (number of students registered in the year of admission)	64	44	38	52	49
Part-time students	-	-	-	-	-
Students studying in equal time for the full academic period	-	-	-	-	-
The number of students graduating (Bachelor's degree)	51	60	47	50	43
The number of students graduating (Master's degree)	11	9	9	10	10
The number of students graduating PhD	8	8	9	7	6

The history of admission standards for freshmen in the past Ten years is represented in Table 5-1.

2.5.2 Student Performance and Progress

Student performance is evaluated using several methods in the classes: quizzes, tests, homework assignments and lab assignments. The Evaluation process and assessment measures are as follows:

Subject with lab.(course)	First Midterm test 20%	Second Midterm test 20%	10% lab. evaluation	Final Exam 40%	Final Grade 100%
Subject without lab.(course)	First Midterm test 15%	Second Midterm test 15%	N/A	Final Exam 70%	Final Grade 100%
Mechanical and Engineering Drawing	First Midterm test 25%	Second Midterm test 25%	10% lab. Evaluation.	Final Exam 50%	Final Grade 100%
Project	First Midterm test 25%	Second Midterm test 25%	N/A	Discussion 25% + 20% evaluation + 10% general exam.	Final Grade 100%

Students who were not able to attend the relevant final examination or fulfill some of the course requirements because of conditions beyond their control are allowed to take a second attempt exam. Also Students who were not able to attend the relevant second attempt examination because of conditions beyond their control (due to security and violence issues) are allowed to take a third attempt exam. If the student fails to get 50% final grade after the

third attempt he/she will be excluded and the general registration office will close his file as student.

2.5.3 Students Transfer

An applicant who has studied at a recognized institution of higher education may apply for admission as a transfer student. A transfer applicant will not be considered for admission if he or she is on academic probation, suspension, or dismissal from the previous institution. The transfer students' conditions are the followings:

1. The Chancellor of the University has the authority to transfer students (either those who pass or not pass the final exams) except the first and last year students to the corresponding departments and branches in another university according to capacity after obtaining clearance from the original and new university.
2. Students who pass final exams have the right to move to the corresponding colleges, departments, and branches in universities at their geographic regions according to the absorptive capacity after obtaining no objection from the original and new university.
3. Movement between colleges at the same governorate is not allowed.
4. Conduct scientific clearing in according to the applicable roles.
5. The departments of UOB represent colleges, and the transfer between them is central and according to an electronic form.
6. Sons and daughters of scientific titles of the faculty have the right to move between the branches of the colleges.
7. Students in community (private) colleges who are pass the final exams with first grade, and at least have a (very good) grade, have the right to move to the corresponding department in the public universities.
8. Acceptance of foreign students (Iraqi and non-Iraqi) from outside Iraq must be performed by the Ministry of Higher Education and Scientific Researches roles.

2.5.4 Students' Advising and Extracurricular Activities

The Chemical Engineering maintains a full-time student services coordinator who provides academic advising to students in the department. At the academic advising orientation, the department’s academic coordinator meets with pre-General Chemical Engineering freshman to plan their schedule for the first semester toensure they are enrolled in the proper courses required by the department, college and university. At the beginning of the first term in residence, freshman is assigned an academic adviser from among the professorial faculty with engineering background and experience. During their academic careers, students are expected to meet regularly with the faculty to plan their programs of study and discuss educational goals; the signature of the faculty advisor is required for course registration.

2.5.5 Graduation Requirements

The graduation requirements for the initial study is complete theoretical and practical study for four years and by units planned and complete the summer training study plan during the study period and the completion of a graduation project to link the teaching curriculum decision.

2.6 Criterion 6: Faculty

2.6.1 Faculty Qualification

Table (6-1) describes the qualifications of the Department and how they are adequate to cover all the curricular areas of the program and also meet any applicable program criteria. Also the Department research and areas of interest are explained in Table (6-1).

TABLE 6-1. FACULTY QUALIFICATIONS

CHEMICAL ENGINEERING PROGRAM

No.	Faculty Name	Highest Degree Earned- Field and Year	Rank [1]	Type of Academic Appointment [2] T, TT, NTT	FT or PT [3]	Years of Experience			Professional Registration/ Certification	Level of Activity [4] H, M, or L		
						Govt./Ind. Practice	Teaching	This Institution		Professional Organizations	Professional Development	Consulting/summer work in industry
1	Hassan F Maki	Ph. D. in Chemical Engineering , 2007	P	T	FT		25	25	many	H	H	H
2	Dr. Mahmood K. Hummadi	PhD/2013/ Chemical Engineering	AST	T	FT		18	18	many	H	H	H
3	Raghad F. Almilly	PhD	AST	T	FT		12	12	many	H	H	H
4	Hayder Abdulkareem Rasheid	Ph.D/ 2018	AST	T	FT		17	17	many	H	H	H
5	Basma ismael Hussein	Phd / water treatment / 2019	AST	T	FT		19	19	many	H	H	H
6	Asrar Abdullah Hassan	PhD in chemical engineering 2008	AST	T	FT	4	28	28	many	H	H	H
7	Maha Muhyi Alwan	Master /Transport phenomena/2005	AST	T	FT		16	16	many	H	H	H

8	Entisar Mohsen Khudhair	Master's degree in chemical engineering/ 2017	AST. L	T	FT		5	5	many	H	H	H
9	Najwa saber majeed	Ph.D/chemical engineering/2005	P	T	FT		22	22	many	H	H	H
10	Basma Abbas Abdulmajeed	Ph D	P	T	FT		40	40	many	H	H	H
11	Hassanain Abbas Hassan	M. Sc. /Chemical Engineering /2013	AST L	T	FT		15	15	many	H	H	H
12	Zaid Waadulla Rashad	Master degree / Materials engineering / 2017	AST L	T	FT		14	14	many	H	H	H
13	Sawsan Abd Muslim Mohammed Albasri	PhD/2006	P	T	FT		40	40	many	H	H	H
14	Nada N. Abdulrazzaq	PhD/2017	L`	T	FT		14	14	many	H	H	H
15	Baseem H. AL-Sabbagh	M.Sc. Chemical Engineering	L	T	FT		18	18	many	H	H	H
16	KHALID H. RHEIMA	Ph D	L	T	FT		19	19	many	H	H	H
17	Ibtehal Kareem Shakir	PhD	P	T	FT		23	23	many	H	H	H
18	Sarmad A. Rashid	M.Sc in Chemical Engineering/ 2009	AST	T	FT		18	18	many	H	H	H
19	Suheila abd al reda akkar	PhD/ mass transfer/2021	L	T	FT		13	13	many	H	H	H
20	Miqat Hasan Salih	Master Degree/Chemical Engineering/2017	AST L	T	FT		10	10	many	H	H	H
21	Maha hadi alhassani	M.Sc/chemical engineering/2008	P	T	FT		33	33	many	H	H	H
22	Wadood Taher Mohammed	Ph.D. in Chemical Engineering/2000	P	T	FT		25	25	many	H	H	H
23	Sarmad fFoad Jaber	Ph.D. 2018	AST	T	FT		19	19	many	H	H	H
24	Ammar S. Abbas	Ph. D. / Chemical Engineering / 2003	P	T	FT		20	20	many	H	H	H
25	Rasha Habeeb Salman	PhD / Chemical engineering/2017	AST	T	FT		15	15	many	H	H	H

26	Khalid Mohsin Abed	Master / Chemical Engineering/ 2012	AST	T	FT		9	9	many	H	H	H
27	Ahmed Faiq Al-Alawy	Ph. D. in Chemical Engineering , 2007	P	T	FT		20	20	many	H	H	H
28	Muthanna Jabbar Ahmed	Ph.D degree, adsorption, 2005		T	FT		17	17	many	H	H	H
29	Sama M. Abdullah	PhD/Mass Transfer and Hydrodynamics/2015	AST	T	FT		15	15	many	H	H	H
30	Ghosoon Abid Mohammed	Doctorates/ chemical engineering/ 2016	AST L	T	FT		8	8	many	H	H	H
31	Wasan Omar Noori	M.A Degree in philosophy 2014	AST	T	FT		12	12	many	H	H	H
32	Samar Kareem Theydan	MSc, chemical eng.	AST	T	FT		19	19	many	H	H	H
33	Rana Th Abd Alrubaye	PhD /chemical engineering / 2013	AST	T	FT		19	19	many	H	H	H
34	Atheer Mohammed Ghalib	PhD /chemical eng./2016	AST	T	FT		18	18	many	H	H	H
35	haider Abbas shanshool	Master engineer/ chemical engineering 2012	L	T	FT		13	13	many	H	H	H
36	Hassan A. Alwan	Master / Corrosion control Engineering/2010	L	T	FT	11	18	18	many	H	H	H
37	Tariq Mohammed Naife	Ph.D,2015	L	T	FT		20	20	many	H	H	H

Instructions: Complete table for each member of the faculty in the program. Add additional rows or use additional sheets if necessary. Updated information is to be provided at the time of the visit.

1. Code: P = Professor ASC = Associate Professor AST = Assistant Professor I = Instructor A = Adjunct O = Other
2. Code: T = Tenured TT = Tenure Track NTT = Non Tenure Track

3. Code: FT = Full-time PT = Part-time Appointment at the institution.
4. The level of activity (high, medium or low) should reflect an average over the year prior to the visit plus the two previous years.

2.6.2 Faculty Workload

TABLE 6-2. FACULTY WORKLOAD SUMMARY

CHEMICAL ENGINEERING PROGRAM

No.	Faculty Member (name)	PT or FT[1]	Classes Taught (Course No./Credit Hrs.) Term and Year[2]	Program Activity Distribution[3]			% of Time Devoted to the Program[5]
				Teaching	Research or Scholarship	Other[4]	
1	Hassan F Maki	FT	Eng. Analysis	50	40	10	100%
2	Dr. Mahmood K. Hummadi	FT	Application computer in chemical Eng.	60	40		100%
3	Raghad F. Almilly	FT	Ind. And Petro.	40	30	30	100%
4	Hayder Abdulkareem Rasheid	FT	Physical Chemistry	50	40	10	100%
5	Basma ismael Hussein	FT	Equipment and Plant Design	60	40		100%
6	Asrar Abdullah Hassan	FT	Ind. And Petro.	60	40		100%
7	Maha Muhyi Alwan	FT	Industrial Management	60	40		100%
8	Entisar Mohsen Khudhair	FT	Thermodynamic	60	40		100%

9	Najwa saber majeed	FT	Process dynamic and control	60	40		100%
10	Basma Abbas Abdulmajeed	FT	Heat Transfer	60	40		100%
11	Hassanain Abbas Hassan	FT	Eng. Analysis	60	40		100%
12	Zaid Waadulla Rashad	FT	Chemical Eng. Lab	60	40		100%
13	Sawsan Abd Muslim Mohammed Albasri	FT	Chemical Eng. Lab	60	40		100%
14	Nada N. Abdulrazzaq	FT	Chem. Eng. Princibles	60	40		100%
15	Baseem H. AL-Sabbagh	FT	Application computer in chemical Eng.	60	40		100%
16	KHALID H. RHEIMA	FT	Process dynamic and control	60	40		100%
17	Ibtehal Kareem Shakir	FT	Analytic Chemistry	60	40		100%
18	Sarmad A. Rashid	FT	Eng, Drawing	60	40		100%
19	Suheila abd al reda akkar	FT	Computer Programing	60	40		100%
20	Miqat Hasan Salih	FT	Application computer in chemical Eng.	60	40		100%
21	Maha hadi alhassani	FT	Mathematics	60	40		100%
22	Wadood Taher Mohammed	FT	Mass Transfer	40	60		100%
23	Sarmad Foad Jaber	FT	English	60	40		100%
24	Ammar S. Abbas	FT	Reactor design	60	40		100%
25	Rasha Habeeb Salman	FT	Fluid	60	40		100%
26	Khalid Mohsin Abed	FT	Chemical Eng. Lab	60	40		100%
27	Ahmed Faiq Al-Alawy	FT	Thermodynamic	60	40		100%
28	Muthanna Jabbar Ahmed	FT	Numerical Methods	60	40		100%
29	Sama M. Abdullah	FT	Chem. Eng. Princibles	60	40		100%
30	Ghosoon Abid Mohammed	FT	Freedoms	60	40		100%

31	Wasan Omar Noori	FT	Chemical Eng. Lab	60	40		100%
32	Samar Kareem Theydan	FT	Computer	60	40		100%
33	Rana Th Abd Alrubaye	FT	Organic Chemistry	60	40		100%
34	Atheer Mohammed Ghalib	FT	Unit operations	60	40		100%
35	haider Abbas shanshool	FT	Chemical Eng. Lab	60	40		100%
36	Hassan A. Alwan	FT	Properties of Eng. materials	60	40		100%
37	Tariq Mohammed Naife	FT	Pulltion	40	60		

1. FT = Full Time Faculty or PT = Part Time Faculty, at the institution
2. For the academic year for which the self-study is being prepared.
3. Program activity distribution should be in percent of effort in the program and should total 100%.
4. Indicate sabbatical leave, etc., under "Other."
5. Out of the total time employed at the institution.

2.6.3 Faculty Size

Describe the adequacy of the faculty size and the extent and quality of faculty involvement in interactions with students, student advising and counseling, university service activities, professional development, and interactions with industrial and professional practitioners including employers of students.

2.6.4 Faculty Development

Provide detailed descriptions of professional development activities for each faculty member.

2.6.5 Faculty Authority and Responsibility

The head of the department is appointed by the President of the University based on the recommendation of the Dean of the department of Engineering. The authority of the department's head spans in general for two to four conductive years. At the end of four years, the authority can be extended or another department member is appointed to take his place. The department's head assigns the members and coordinators of the department and various committees. He distributes the administrative tasks and academic affairs to the designated department Committee. The department's head leads the department council meetings and represents the department at the college of engineering's council meetings. The Head of Department shall exercise scientific, administrative and financial authorities by which he can perform his job. Our full-time department responsibility includes teaching, research, institutional and committee services, and professional society services. Most of the department academic and the general program issues are taken care of by the relevant committees. Usually, course modification and evaluation is the main task of the scientific committee. However, a department member can initiate the creation of a new course. Major curriculum renovation is usually presented by the scientific committee at the department's General Board meeting where each department member has the chance to interfere in the creation or modification process. The curriculum modification proposal is presented to the college engineering curriculum committee for final approval.

2.7 Criterion 7: Administrative Support

2.7.1 Leadership and Administrative Services

Describe the leadership and administrative services of the program and discuss its adequacy to ensure the quality and continuity of the program and how the leadership is involved in decisions that affect the program. Describe how teaching is supported by the institution in terms of teaching assistants, teaching workshops, etc.

2.7.2 Faculty Support

Describe the process of hiring new faculty, the strategies used to retain and promote current qualified faculty and the adequacy of support for faculty professional development (how such activities such as sabbaticals, travel, workshops, seminars, etc., are planned and supported).

2.7.3 Technical and Administrative Staff Support

Describe the adequacy of administrative, instructional, and technical staff concerning size, qualification and methods used to recruit, retain, promote, and develop them.

2.8 Criterion 8: Financial Support

2.8.1 Funding Resources

The Baghdad University budget and its departments are a fully supported by government institution, with the entire budget coming from the Iraqi government. Moreover, the university also receives some grants and gifts from some state offices and institutions, as well as from some international organizations and civil society organizations. However, such contributions amount to only a small fraction of the government allocations. Thus, the main source of departmental financial support is from government allocations. Additional sources of departmental financial support come indirectly from faculty funded research grants, experimental tests made in some laboratories for various state organizations, and industry consultations. All these activities are covered by the Central Cooperation Mechanism Committee of the university, which is working according to the law of cooperation mechanism.

2.8.2 Program Budget:

The Department budget is part of the overall Baghdad University budget. The departmental budget is mainly dominated by the allocated (for morning study) budget that is submitted separately per the process explained in the previous article. Additional budget items include furniture, rehabilitations of department buildings, books, supplies… etc. In addition to the approved laboratory budgets presented earlier, Table (8-1) provides the departmental expenditures for the fiscal year 2019 for items.

Table (8-1) Budget disbursement details of the Chemical Engineeriong Department for the financial year 2019.

N0.	Item	The amount in Iraqi Dinar	
1	Total faculty salaries		
2	Total salaries of administrators, technicians and engineers		
3	Allocated to the college budget		
4	Total wages additional lectures		
5	Total allocated for maintenance of buildings, equipment amounts		
6	Total allocated to equipment, materials and supplies amounts		
7	Total allocated for the purchase of scientific books amounts		
8	Total allocated for conferences and	N/A	N/A

	seminars amounts		
9	Total allocated for the purposes of scientific research and graduate studies amounts		
10	Total allocated funds for training courses		
11	Total allocated to set up exhibitions and celebrations amounts		
12	Total amounts allocated to workshops		
13	Total allocated amounts of Student Services		
14	Total allocated to scientific dispatching amounts		
15	Total allocated for the purchase of textbooks amounts		
16	Total amounts allocated for bonuses		

2.9 Criterion 9: Facilities

2.9.1 Built Spaces and Associated Equipment

The Chemical engineering Department faculty and students have sufficiently adequate (with minimum requirements) facilities available for conducting a successful program. The facilities include several classrooms, laboratories, workshop, faculty offices, department library, college and university libraries, university students club, and network access facilities. There is meetings and conference room, which equipped with computer integrated projection equipment (LCD and / or Data Show). We also have a break room equipped with sufficient requirements. In the following sections we provide detailed information regarding the faculty offices, classrooms, laboratories, workshop, faculty offices, department library, and college and university libraries.

2.9.1.1 Offices

The Chemical engineering Offices are located in buildings A and B. Most of these offices are for two faculty members each, and some are for two-three members. The offices have adequate furniture. The offices are air-conditioned and equipped with computers or network connection. It should be noted, though, that the faculty offices are small in size such that they are inadequate to hold a discussion between the faculty and more than 2-3 students. The average faculty office space is about 10 square meters.

2.9.1.2 Classrooms

The classrooms are available large and medium size. All are equipped with blackboards, and some with whiteboards, as the main tool for lecture presentation. Tables are also provided according to the level and number of students (or persons). All classrooms are not equipped with network connected computers but high resolution projectors which can be used to deliver

electronic class notes and perform in-class demos and presentations are available. Table 9.1 classifies all provided classrooms according to their type, area, and capacity.

Table (9-1): Classrooms types and sizes

Classroom		Area (m^2)	MAX No. Of Students
Room No.	**Type**		
A 1	Lecturing	72	50
A 2	Lecturing	72	50
A 3	Lecturing	72	50
A 4	Lecturing	40	25
A 5	Lecturing	50	40
A 6	Lecturing	40	25
A 7	Lecturing	40	25
A 8	Lecturing	50	25
A 9	Lecturing	50	25
Drawing Hall	Lecturing +Drawing		
Dissc_1	Lecturing+ discussion+ giving presentations	60	30

2.9.1.3 Laboratory

Chemical Engineering Department holds many laboratories and workshops which includes many devices and equipment used to conduct the experimental tests done by undergraduate and postgraduate students. These laboratories are very much useful to do many tests and analyses. Furthermore, they have been using to conduct the engineering projects by the forth class students. In addition they have the ability to achieve different tests and other works to the government establishments, private sector, and many postgraduate students from other universities.

2.9.2 Computing Assets

As stated above, the network access facilities are provided by the Computer Center of the in the form of a Wireless LAN network available. Both faculties can access the network. Networking facilities at have seen exponential growth over the last few years.

2.9.3 Students Direction and Safety Precautions

Describe how students in the program are provided appropriate guidance regarding the use of the tools, equipment, computing resources, and laboratories and how the program ensures the facilities, tools, and equipment used in the program are safe for their intended purposes.

2.9.4 Maintenance and Upgrading of Facilities

Acquisition, and Maintenance One of the most important and challenging problems encountered in the department is the lack of laboratory equipment and instrumentation in the department laboratories, in spite of considerable progress achieved by the department in this area in the last year. The Chemical Engineering Department continuously addresses any upgrades / additions for the labs by estimating the yearly budget needed for the labs and submitting it to the college and university. The full process used to determine the department lab budget is divided into two levels: (1) the college and university level, and (2) the department level. The two levels are described next.

At the college and university level, as every fiscal year is coming to an end, the planning committee at the college and university level is required to review the needs of major equipment and PCs of all academic colleges and departments make consolidated recommendations for the allocation of an appropriate budget for the next fiscal year. In this connection, a memo will be sent to all the academic colleges / departments by the chairman of the university planning committee before the end of every fiscal year requesting them to prepare their lists of major equipment and PCs for labs to be procured during the following fiscal year.

2.9.5 Library Services

The students can have access to one libraries in the university campus; and one in the college of engineering, and small libraries of the department.

Department's Library

This library was established in 2002 which offers different services to the students and department employees. Besides, the library is also accessible to students and researchers from other departments from the UOT and other colleges from outside the UOT campus.

Researchers from various state offices and ministries have the ability to use this library for free. In brief, the library has the following facilities:

* Area of the library (48 m^2)
* 937 Books
* 292 Periodical
* 145 P.G. Theses and Dissertations
* 511 B.Sc. Graduation Projects
* 97 B.Sc. Students' Seminars
* 203 CDs
* 2 Internet Access Terminals

2.10 Specific Program Criteria

Describe how the program satisfies any applicable program criteria. If already covered elsewhere in the self-assessment report, provide appropriate references.