**Ministry of Higher Education and Scientific Research**

**University of Mosul**

**College of Computer Science and Mathematics**

**Self-evaluation report and improvement plan for the software department**

**For the academic year (2020-2021)**

**Prepper By**

**Quality Assurance and Academic Accreditation Committee**

**About the software department**

**The software department was established in 2002. The department aims to qualify programmers with high efficiency and potential in applying engineering concepts, techniques, and methods for the purpose of designing, implementing, and maintaining large and complex software systems related to operating system software, cybersecurity software, real-time software, information security software, artificial intelligence software, and scientific and engineering applications software. The department also seeks to provide the student with the ability to evaluate alternative solutions to the problem and use software to implement the solution, acquire skills to present ideas and work within one team through graduation projects, be aware of the content and impact of technological changes on the work environment, acquire sound educational foundations for interacting with future developments in this vital field, and qualify students for postgraduate studies in the field of software engineering. Hence composition Highly efficient, error-free software that meets the customer's needs and requirements and helps him carry out his tasks easily and quickly. It is expected that the need for qualified programmers will increase with the increasing growth of the information revolution and multimedia applications witnessed in the current era, which has led to the use of software in addressing the needs for information systems in all sectors of society.**

**Vision**

**The department aspires to be a pioneer in the field of software, as its interest is focused on developing its capabilities in various fields that serve the scientific process and enrich the knowledge society.**

**message**

**The department seeks to effectively contribute to the country’s rise to the ranks of developed countries through:**

1. **Providing the student with engineering concepts, techniques and methods in building and maintaining large and complex software systems related to real-time software, cybersecurity software, artificial intelligence software, scientific and engineering application software, operating system software, etc., and keeping pace with scientific and technological development in this field.**
2. **Understand why and how technology impacts the workplace.**
3. **Completing academic and applied scientific research in the precise specializations of software engineering.**

**Department objectives**

**1. Providing the community with qualified cadres for teaching and development in the field of designing and building large software systems.**

**2. Developing the capabilities of students and scholars to participate positively and effectively in community service.**

**3. Linking scientific research with the problems facing state institutions and the private sector through applied research.**

**4. Activating scientific cooperation between the university and other universities in the field of scientific research, studies and research.**

**5. Interaction with other sciences, especially statistics and computers.**

**6. Acquiring skills to present ideas and work within one team through graduation projects.**

**The following diagram shows the structure of the administrative and scientific software department:**

**مكتب رئيس قسم البرمجيات**

تدريسيي قسم البرمجيات

مختبر 103

سكرتارية القسم

مختبر 303

الموظفون

لجان القسم العلمية والادارية

مكتبة القسم

التعليم المجاني

مختبر 304

مخزن القسم

اللجنة الامتحانية

الخدمات

قاعات الدراسات الاولية

قاعات الدراسات العليا

**مكتب مقرر قسم البرمجيات**

**Obtaining an academic accreditation certificate: The department has not obtained academic accreditation yet.**

**Department status:**

**Teaching staff:**

|  |  |  |
| --- | --- | --- |
| **ت** | **the name** | **Subspecialization** |
|  | ا.د. دجان بشير طه | سرية وأمن المعلومات |
|  | ا.م.د .لهيب محمد ابراهيم | ذكاء اصطناعي |
|  | ا.م.د.أسماء ياسين حمو | نظم تشغيل و معمارية حاسوب |
|  | ا.م. د.ندى نعمت سليم | تقنيات ذكائية |
|  | ا.م.د.جمال صلاح الدين مجيد | تقنيات البايومعلوماتية |
|  | ا.م.د.شهباء ابراهيم خليل | تقنيات ذكائية |
|  | ا. م .اسيل وليد علي | تقنيات ذكائية |
|  | ا. م .حنان حامد علي | معالجة صور |
|  | ا.م.د صفوان عمر حسون | ذكاء اصطناعي |
|  | ا.م.د نجلاء أكرم يونس | تقنيات ذكائية |
|  | ا.م. د. سماء طليع عزيز | تقنيات ذكائية |
|  | ا. م .بيداء سليمان بهنام | تقنيات ذكائية |
|  | ا.م.د.ابراهيم احمد صالح | تقنيات ذكائية |
|  | أ.م.شهد عبد الرحمن حسو | سرية وامن معلومات |
|  | م. د.علياء قصي احمد | معالجة صور ورؤية حاسوبية |
|  | م. د .منى محمد طاهر | شبكات |
|  | م. د .شذى عبد الله محمد | امثليه عدديه |
|  | م.مها عبد الاله محمد حسن | تقنيات ذكائية |
|  | م. د.اخلاص عبد الجبار | شبكات |
|  | م.د. نادية معن محمد | امنية وسرية معلومات |
|  | م. د. آن أكرم جرجيس | تقنية معلومات |
|  | م. د .فرات يونس عبد الرزاق | هندسة نانو الكترونيك ونانو تكنولوجي |
|  | م. د.رياض زغلول محمود | المعالجات المتوازية والمعمارية |
|  | م.غادة محمد طاهر | معالجة صور واشارة |
|  | م.عمر طارق صالح | شبكات واتصالات الحاسوب |
|  | م.ريا جاسم عيسى | امنية معلومات |
|  | م. أسماء سالم يحيى | أمنية معلومات |
|  | م. د. كرم حاتم ذنون | امنية شبكات وانترنت |
|  | م. زهراء مازن طه | معالجة صور |
|  | م. د.محمد عبد الغني طه | برمجيات |
|  | م. د.نكتل مؤيد عيدان | هندسة برمجيات الهندسة العكسية |
|  | م. د. محمد زكي حسن | Wireless Sensor Network &(IoT) |
|  | م.أشرف عبد المنعم عبد المجيد (طالب دكتوراه) | هندسة برامجيات |
|  | م.عاتكة محمد عبد الله | هندسة برامجيات |
|  | م.د. عزام عصام داؤود | اتصالات راديوية |
|  | م.زياد صفاء يونس | علوم حاسوب |
|  | م. حسن ماهر احمد انور النعمة (طالب دكتوراه) | وسائط متعددة |
|  | م. محمد عبدالرحيم (طالب دكتوراه) | امنية معلومات |
|  | م.م فراس محمد صالح (طالب دكتوراه) | هندسة برمجيات |
|  | م. م. سندس عبد المطلب محمد | علوم حاسوب |
|  | م. م.أنسام أسامة عبد المجيد | أمنية معلومات |
|  | م. م. رشا غانم سعيد | هندسة البرمجيات |
|  | م. م.انفال عبد المنعم فاضل | هندسة البرمجيات |
|  | م.م. هبة منير يحيى (طالب دكتوراه) | امنية معلومات |
|  | م.م.اسماء هادي ذنون | هندسة البرمجيات |
|  | م. م.عمر إنعام محمد | هندسة البرمجيات |
|  | م. م.مروة عبد الكريم زيدان | هندسة البرمجيات |
|  | م.م.براء سامي مصطفى | هندسة البرمجيات |
|  | م. م.ميس الريم عضيد | علوم الحاسوب |
|  | م.م.علياء غانم سليمان | امنية شبكات |
|  | م.م.مصطفى اسماعيل شكري | متطلبات هندسة البرمجيات |
|  | م.م.دينا رافع احمد | برامجيات |
|  | م. م.شامل قيس ابراهيم | هندسة برمجيات |
|  | م. م.اسراء خالد احمد | Information Technology |
|  | م. م.عمر هيثم محمد (طالب دكتوراه) | شبكات |
|  | م. م.تغريد رياض جار الله | هندسة البرمجيات |
|  | م. م.مروة مروان عبد العزيز | هندسة البرمجيات |
|  | م. م.عبد الله هاني احمد | هندسة البرمجيات |
|  | م.م. فردوس عدنان | هندسة البرمجيات |
|  | م.م.شيماء احمد جياد | هندسة البرمجيات |

**حملة شهادة الدكتوراه:**

|  |  |  |
| --- | --- | --- |
| **ت** | **الاسم** | **التخصص الدقيق** |
|  | ا.د. دجان بشير طه | سرية وأمن المعلومات |
|  | ا.م.د .لهيب محمد ابراهيم | ذكاء اصطناعي |
|  | ا.م.د.أسماء ياسين حمو | نظم تشغيل و معمارية حاسوب |
|  | ا.م. د.ندى نعمت سليم | تقنيات ذكائية |
|  | ا.م.د.جمال صلاح الدين مجيد | تقنيات البايومعلوماتية |
|  | ا.م.د.شهباء ابراهيم خليل | تقنيات ذكائية |
|  | ا.م.د صفوان عمر حسون | ذكاء اصطناعي |
|  | ا.م.د نجلاء أكرم يونس | تقنيات ذكائية |
|  | ا.م. د. سماء طليع عزيز | تقنيات ذكائية |
|  | ا.م.د.ابراهيم احمد صالح | تقنيات ذكائية |
|  | م. د.علياء قصي احمد | معالجة صور ورؤية حاسوبية |
|  | م. د .منى محمد طاهر | شبكات |
|  | م. د .شذى عبد الله محمد | امثليه عدديه |
|  | م. د.اخلاص عبد الجبار | شبكات |
|  | م.د. نادية معن محمد | امنية وسرية معلومات |
|  | م. د. آن أكرم جرجيس | تقنية معلومات |
|  | م. د .فرات يونس عبد الرزاق | هندسة نانو الكترونيك ونانو تكنولوجي |
|  | م. د.رياض زغلول محمود | المعالجات المتوازية والمعمارية |
|  | م. د. كرم حاتم ذنون | امنية شبكات وانترنت |
|  | م. د.محمد عبد الغني طه | برمجيات |
|  | م. د.نكتل مؤيد عيدان | هندسة برمجيات الهندسة العكسية |
|  | م. د. محمد زكي حسن | Wireless Sensor Network &(IoT) |
|  | م.د. عزام عصام داؤود | اتصالات راديوية |

**Distribution of committees in the software department**

**26 working committees were formed in the Software Department for 2020/2021, as follows:**

1. **Department Scientific Activities Committee.**
2. **Continuing Education Committee.**
3. **Fingerprint Committee.**
4. **Reclamation Committee.**
5. **Department magazine committee.**
6. **Research Committee.**
7. **Guidance Committee.**
8. **Reconstruction Follow-up Committee.**
9. **Absences Committee.**
10. **Postgraduate Studies Follow-up Committee.**
11. **Curriculum Follow-up Committee.**
12. **Media Committee and the department’s website.**
13. **Graduation Projects Committee.**
14. **Internet and Equipment Maintenance Committee.**
15. **Teaching Affairs Follow-up Committee.**
16. **Student Affairs Follow-up Committee.**
17. **Quality Assurance Committee.**
18. **Discussion Committee.**
19. **Exhibitions and Books Committee.**
20. **Institutional Accreditation Committee.**
21. **Scientific journals accreditation committee.**
22. **Department magazine committee.**
23. **Electronic uncles committee.**
24. **Internal Departments Committee.**
25. **Programming Development Committee with Spark Organization.**
26. **Committee to support the ministerial team.**

**Department structure - number of teaching staff relative to the number of students:**

**Number of teaching staff = 60**

**Total number of four stages = 280**

**Number of students / number of teaching staff = 280 / 60 = 4.66**

**Staff experience in the field of teaching and scientific research:**

* **Undergraduate and graduate students were taught in the Software Department and other departments. - During the year 2020/2021**
* **31 scientific papers were published.**

**Ethics of teaching staff:**

* **Emphasizing the moral dimensions by giving lectures or directives to students.**
* **Transparency in academic and administrative dealings with students, employees, and faculty.**
* **Reviewing research, especially for promotion purposes, by the Scientific Committee**
* **Approval of supervision of students by the scientific committee in the department.**
* **The faculty member has complete freedom to express his personal opinion on various matters.**
* **The employees deal in a kind manner with visitors, whether students or their parents.**

**Teaching staff’s commitment to office hours in following up on students and scientific research:**

* **According to the weekly schedule, each teacher is obligated to follow up on the educational supervision and graduation research for fourth-year students.**
* **Hours are provided for scientific research according to the available scientific materials and equipment within the department.**

* **The development of scientific research and the writing of books: and not for the purpose of scientific promotions only: 31 scientific papers were published.**

|  |  |
| --- | --- |
| **Strengths** | **Weaknesses** |
| * Providing the time necessary for students to review the teaching staff.
* Follow up on the supervision process for graduate and undergraduate students.
* Saving the time needed for scientific research.
 | * The number of hours available for review by all students is limited, including supervision and scientific research time.
 |
| **Opportunities** | **Threats** |
| * There are ample opportunities to identify good students and follow them up while providing the teacher with background on the students' situations.
* Providing an opportunity for social communication and reducing the gap between professor and student.
 | * Lack of commitment by some teachers or students to the follow-up topic.
* The availability of scientific research tools in the time allocated for teaching reduces the production of scientific research.
 |

Students

Preliminary studyIn terms of:

* **Number of accepted students - according to the admission plan: 118**
* **First stage = 101**
* **Acceptance rates: 73.5**
* **Transit system: yes**
* **Third floor: No**
* **Course system: No**

**Despite the large numbers of students who graduate every year, there is no real mechanism in the department to follow up on graduates, whether at the level of undergraduate or postgraduate graduates. The mechanism followed is simple and is carried out through communication between teachers or guidance committees with students. Therefore, there is a need to adopt a platform to follow up on graduates.**

Postgraduate studies in terms of:

Teaching staff:

* **Staff experience in the field of teaching and scientific research:**

**The teaching staff in the Software Department has scientific and practical experience in teaching and graduating postgraduate students as well as scientific research. The department's teaching staff is a harmonious blend of the experiences of graduates from home and abroad.**

* **The various specializations in the teaching staff of the Software Department:**

**There are many specializations in the software department, including:** Software engineering, computer networks, intelligent technologies, computer and network security, operating systems, cybersecurity, image processing and computer vision, information security and confidentiality, complex networks, computer science, software reliability, multimedia, databases.

Scientific titles of faculty members:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **the total** | **Mr.** | **assistant professor** | **teacher** | **Assistant teacher** | **Scientific title** |
| 60 | 1 | 13 | 24 | 22 | number |

Faculty members by degree and gender:

|  |  |  |
| --- | --- | --- |
| **Certificate type** | **Masters** | **Ph.D** |
| **number** | **Males** | **females** | **Males** | **females** |
| **11** | **26** | **10** | **13** |
| **the total** | **37** | **23** |

Number of published research for the year 2020/2021: **31 scientific research**

**Relying on modern and advanced scientific sources:**

**Relying on methodological books, e-books available in the department, and Internet sites to develop the teaching method and modern techniques for scientific research.**

Postgraduate students:

**Competition rate for admission:**

**Higher diploma: 50%**

**Master's: 65%**

**- Fields of admission: (**software engineering, **communication** Computer networks, intelligent techniques, computer and network security, image processing, software reliability, complex networks, multimedia, databases)

**- Numbers of accepted students - relative to the number of teaching staff in terms of experience, certification, and academic title.**

**1 professor and 13 assistant professors.**

Number of students accepted into postgraduate studies for the year 2020/2021:

**Higher diploma: 13**

**Masters: 26**

**Status of postgraduate students for the academic year 2020/2021:**

|  |  |  |  |
| --- | --- | --- | --- |
| Type of study | Courses stage | Research stage | Graduates |
|  Higher Diploma (new opening) |  13 | 0 | 0 |
| Masters (re-open) | 26 | 0 | 0 |

SWOT analysis:

|  |  |
| --- | --- |
| **Strengths** | **Weaknesses** |
| * Providing the academic community with holders of advanced degrees, which enhances the academic standing of the department, college, and university.
 | * Not focusing enough on projects that serve the community or solve problems on the ground.
 |
| **Opportunities** | **Threats** |
| * There are great opportunities to benefit from postgraduates by engaging them in solving technology-related problems, whether at the public or private sector level.
 | * Lack of seriousness in solving the problem in a practical and applied manner in the messages and theses they are working on.
 |

**Fourth: Curriculum in terms of:**

* **The extent of the modernization of academic subjects to keep pace with scientific development and the labor market**:

Often, every year, a percentage of modernization (approximately 20%) occurs or is added to the teaching of primary and higher academic subjects by assigned teachers in a way that is compatible with the labor market and scientific development.

* **Adopting the English language subject in the school curricula for all levels**:

 Subjects are taught in English for all levels.

* Relying on modern curricula:

The availability of financial support is necessary to rely on modern-edition curricula because the number of students is increasing and old textbooks are exhausted, and therefore we need financial support annually for the purpose of providing modern curricula.

* Availability of the number of textbooks for subjects in (free education) to the ratio of the number of students:

The number of textbooks for academic subjects is disproportionate to the increase in the number of accepted students.

* Providing computer laboratories with modern capacity and technology and numbers of computers appropriate to the number of students:

Providing computer laboratories, but suitable and new computers are not available compared to the number of students accepted annually.

* **Focusing on teaching (practical + theoretical) some subjects to benefit the student in the labor market after graduation**:

In the Software Department, specialization subjects are taught (practical + theoretical) in accordance with the labor market after graduation.

* **Adopting academic courses instead of the annual system**.

**Conditions for obtaining a bachelor’s degree in software**

|  |  |  |
| --- | --- | --- |
| **Annual pursuit degree** | **Theoretical** | **Practical** |
| Score of the first semester exam of the course | 20 | 7.5 |
| Score of the second semester exam of the course | 15 | 7.5 |
| The total for the first and second semesters | 35 | 15 |
| Pursuing grade for the first course | 50 |
| Final exam score | 50 |
| Minimum passing grade | 50% |

Updated university calendar for the academic year 2020-2021

|  |  |  |  |
| --- | --- | --- | --- |
| **Details of academic year dates** | **the date** | **The specified period** | **Details of academic year dates for the first stage only** |
| **Start and end date** | **Notes** |
| First semester | 6/12/2020- 19/3/2021 | 15 weeks | It starts on Sunday 12/6/2020 and ends on Thursday 4/3/2021 | 14 weeks, including exams, and the remaining period is compensated for by taking Saturdays off |
| * Semi-annual exams for colleges and institutes that follow the annual system
* Final exams for the first semester for colleges and institutes that follow the semester system
 | 22/3/2021- 3/4/2021 | Two weeks |
| Spring break | 4/4/2021- 10/4/2021 | Two weeks | It begins on Sunday 4/4/2021 and ends on Thursday 4/10/2021 | One week |
| Second semester  | 11/4/2021- 22/7/2021 | 15 weeks | It starts on Sunday 4/11/2021 and ends on Monday 8/9/2021 | 13 weeks, including exams, and the remaining period is made up through Saturdays |
| * Final exams for colleges and institutes that follow the annual system
* Final exams for the second semester for colleges and institutes that follow the semester system
 | 25/7/2021- 9/8/2021 | Three weeks |
| Summer vacation | 10/8/2021- 9/9/2021 | city | - | - |
| Summer training for students of colleges and institutes included in it, according to the period approved in the instructions for summer training |  |  |
| Second round exams  | 12/9/2021-23/9/2021 | Two weeks | - | - |

Fifth - Service supplies in terms of:

**Classrooms and their suitability for teaching (cleanliness, lighting, classroom seats, availability of fans and air conditioners, windows and curtains, classroom doors, etc.):**

**- The Software Department is allocated 6 primary teaching halls for morning studies.**

**- There is a display screen or datashow in some halls.**

**- A hall is allocated for teaching diploma and a hall for teaching master’s in the software department.**

**- Internet service is provided in the department for teachers.**

**- Continuous cleaning, lighting, study chairs, fans, air conditioners, windows, curtains, and appropriate classroom doors are available in a way that suits a suitable study atmosphere for the student and the teacher as well.**

- Availability **3 scientific laboratories for preliminary studies.**

**- Equipping the department with modern scientific equipment that enhances the integrity of scientific research for professors and graduate students**

**- Faculty members’ offices in terms of availability (cleanliness - lighting - air conditioners - modern furniture - Internet):**

**- Some of the teachers’ rooms are not clean, as the floor carpets need to be replaced, as they are very old and always dusty. Therefore, they need to be replaced with new suitable carpets, and the teachers’ rooms need to be cleaned, as well as the walls need to be repainted.**

**You need to provide sufficient lighting, as there is only one or two lights available, which is not enough to make the room fully lit.**

**Air conditioners need annual maintenance, and some of them need to be replaced due to consumption and poor cooling.**

**The desks in the teachers’ rooms are old and need to be replaced due to their large size, with the small area of ​​the room and the increase in the number of teachers in the room, where there are four teachers in one room, which makes it difficult to move and the lack of space for students or guests to discuss topics with the teachers.**

**- Most teachers use their personal computers in their rooms because there are no computers in the department for teachers.**

**- Toilets in terms of number - cleanliness - availability of water:**

 **There are 2 bathrooms for teachers and 2 for students, which require constant maintenance and cleaning due to the increasing number of students.**

**- Provide drinking water coolers:**

 **The department does not have potable water coolers due to the lack of financial support allocated to them.**

**Self-evaluation of the department's general condition**

**SWOT analysis:**

|  |  |
| --- | --- |
| **Strengths** | **Weaknesses** |
| * The department's teaching and research activity continues.
* Teachers perform their duties despite the obstacles that limit their achievement rate.
 | * Lack of appropriate environment for teachers to work effectively.
* Lack of basic means for teacher and student comfort.
* Lack of tools needed by the professor and student.
* Lack of financial support to meet the department’s needs.
* The department does not have a building of its own, as a building is shared with another department due to damage to the department’s building during the recent war.
 |
| **Opportunities** | **Threats** |
| * When the necessary support is available, there is a great opportunity for the department to witness a qualitative leap in the field of education and scientific research.
 | * The current status of the department continues without support.
 |

Faculty members invested in postgraduate studies

|  |  |  |
| --- | --- | --- |
| **ت** | **the name** | **Subspecialization** |
| ١ | ا.د. دجان بشير طه | سرية وأمن المعلومات |
| ٢ | ا.م.د .لهيب محمد ابراهيم | ذكاء اصطناعي |
| ٣ | ا.م.د.أسماء ياسين حمو | نظم تشغيل و معمارية حاسوب |
| ٤ | ا.م. د.ندى نعمت سليم | تقنيات ذكائية |
| ٥ | ا.م.د.جمال صلاح الدين مجيد | تقنيات البايومعلوماتية |
| ٧ | ا.م.د صفوان عمر حسون | ذكاء اصطناعي |
| ٨ | ا.م.د نجلاء أكرم يونس | تقنيات ذكائية |
| ٩ | ا.م. د. سماء طليع عزيز | تقنيات ذكائية |
| ١٠ | ا.م.د.ابراهيم احمد صالح | تقنيات ذكائية |
| ١١ | م. د .منى محمد طاهر | شبكات |
| ١٢ | م. د.رياض زغلول محمود | المعالجات المتوازية والمعمارية |
| ١٣ | م. د .فرات يونس عبد الرزاق | هندسة نانو الكترونيك ونانو تكنولوجي |
| ١٤ | م. د. كرم حاتم ذنون | امنية شبكات وانترنت |
| ١٥ | م. د.محمد عبد الغني طه | برمجيات |
| ١٦ | م. د.نكتل مؤيد عيدان | هندسة برمجيات الهندسة العكسية |
| 17 | م. د. محمد زكي حسن | Wireless Sensor Network &(IoT) |
| 18 | ا. م .اسيل وليد علي | تقنيات ذكائية |

**The need for employees in terms of certification and specialization: 5**

**The staff cadre is very small and does not fit with the department’s needs and the increase in the number of students. Therefore, the department needs to increase the staff cadre commensurate with the department’s structure in terms of teaching staff and students.**

 **Suitability of employee offices (furniture - cooling - heating - computers - lighting - cleanliness):**

**Fairly convenient**

**Humanitarian activities:**

1. **Field visits to schools**
2. **Participation of some of the department’s teaching staff with students in a group breakfast.**
3. **Contributing to the Million Trees Campaign as a volunteer campaign.**
4. **Contributing to the campaign to provide medical supplies to Mosul General Hospital.**
5. **Contributing to the campaign to donate books to the department’s library after it was damaged during the recent war.**
6. **Contributing to the charitable market for orphans.**
7. **Contributing to the college’s student festival.**

**Service supplies:**

|  |  |
| --- | --- |
| **Information** | **number** |
| Private rooms for faculty members | 5 |
| Private computers for teachers | nothing |
| Special computers for administrative work | 12 |
| Special computers for scientific research | nothing |
| Classrooms for primary school students | 6 |
| Computer laboratories | 3 |
| Computers available for primary school students (computer laboratories) | 41 |
| Postgraduate student halls | 2 |
| Computers available for graduate students | nothing |
| Private bathrooms for faculty members and staff | 2 |
| Private bathrooms for students of the scientific department | 2 |

**Improvement plan and its completion/Department of Computer Science**

**For the academic year (2020-2021)**

**Improvement plan:**

The improvement plan is based on the weak points identified in the axes of the self-evaluation report for the year (2020-2021). The improvement plan can be summarized as follows:

**- Trying to fill the shortage of modern devices and equipment to manage the educational process.**

**- Working to address the severe shortage in the number of working employees.**

**- Striving to increase the number of published research and increase external scientific activities.**

**- Work on the reconstruction of the department building.**

**- Working to address the many malfunctions in devices and computers as they are old.**

**- Trying to provide instructions for using the equipment available in laboratories.**

**- Working to provide training for members of quality committees.**

**- Trying to provide financial planning (budget) to support the department’s programs, including holding or participating in seminars, conferences, and workshops, and leaving that to the Deanship of the College’s estimates at the time.**

**- Improving infrastructure for sports and extracurricular activities.**

**Completion of the improvement plan:**

After following the improvement plan, relative progress was achieved in many aspects of the department, and the most prominent areas of improvement can be summarized as follows:

**- Some modern devices and equipment were provided to manage the educational process.**

**- The severe shortage in the number of working employees has not been addressed, and this point will be placed as a priority in the next improvement plan.**

**The number of published research was gradually increased and external scientific activities increased.**

**- Many cases of malfunctions in devices and computers, as they are old, have been addressed.**

**- Instructions were provided for using the equipment available in laboratories.**

**- Workshops were held for members of quality committees.**

**A relative improvement has been made in the infrastructure for extracurricular activities.**

In addition to the above, the following improvements have been made:

* Some primary studies laboratories have been improved and equipped with the necessary tools for teaching.
* Many students were employed in projects to serve the community and encourage solutions to existing problems in the public and private sectors.
* A mechanism was provided to follow up on graduates (graduates of postgraduate and undergraduate studies) and the outcomes of the educational and research process and document them by the Presidency of the University of Mosul.
* The curriculum has been developed not only to keep pace with international universities, but also to solve societal problems in the public and private sectors.
* Graduate and undergraduate students' projects were bridged with societal problems.
* Relative progress has been achieved at the level of academic promotions in the department, including obtaining the rank of professor and assistant professor, which is in the interest of graduate studies and their projects.
* Scientific courses were held inside and outside Iraq in many specializations, the most important of which was e-learning, which led to the development of the staff in accordance with several forced conditions and situations that the educational process went through (for example, the period of the Corona virus).