



ANNUAL QUALITY ASSURANCE AND ENHANCEMENT REPORT

Bologna Process Quality Assurance Council (QAC) | Academic Year 2025–2026
Department of Fuel and Energy Engineering Techniques

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Institution Name	Shatt Al-Arab University College (كلية شط العرب الجامعة)
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Academic Year	2025–2026
Colleges & Departments with BP	2 Colleges / 4 Departments implementing Iraqi Bologna Process
Academic & Staff Roster	22 Total Academic Staff (19 Full-time Faculty + 3 Support Staff)
B.Sc. Student Population	912 Total Students (Stage 1: 374, Stage 2: 264, Stage 3: 274)
Levels & Modules with BP	3 Levels (Stages 1, 2, 3) 38 Total ECTS Modules
LMS Platform & Web URLs	Shatt Al-Arab Bologna LMS Website: https://sa-uc.edu.iq/ar QA: https://sa-uc.edu.iq/ar/qa

LIST OF CONTENT

Section Title	Page
1. PREFACE	1
2. REPORT SUMMARY	2
2.1 ESG-2015 Standards Assessment	2
2.1.1 Policy for Quality Assurance	2
2.1.2 Design and Approval of Programmes	3
2.1.3 Student-Centered Learning, Teaching and Assessment	4
2.1.4 Student Admission, Progression, Recognition and Certification	5

2.1.5 Teaching Staff & API Framework	6
2.1.6 Learning Resources and Student Support (Chemistry Lab LCH0354)	7
2.1.7 Information Management & Student Survey Analytics	9
2.1.8 Public Information	10
2.1.9 On-going Monitoring and Periodic Review of Programmes	11
2.1.10 Cyclical External Quality Assurance	12
2.2 General Statistics on Student Achievement, Marks and Grade	13
2.3 General Statistics on Research & SDG 2023 Alignment	15
2.4 General Recommendations and Operational Enhancement Plan	16
2.5 List of Programs Following Bologna Process	17
APPENDIX A: FACULTY ROSTER & ACADEMIC PERFORMANCE INDICATOR (API) REPORT	18
APPENDIX B: ADMINISTRATIVE & TECHNICAL SUPPORT STAFF ROSTER	21

1. PREFACE

The purpose behind preparing this Annual Quality Assurance and Enhancement Report is to demonstrate the institutional mechanisms established at Shatt Al-Arab University College for ensuring high-quality higher education, effective teaching methodologies, and rigorous learning outcome assessment under the Iraqi Bologna Process guidelines. Quality assurance is treated as a continuous, evidence-based process designed to monitor, review, and enhance every aspect of academic delivery.

This analytical evaluation report specifically evaluates the Department of Fuel and Energy Engineering Techniques for the academic year 2025–2026. The evaluation framework is fully anchored in the European Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG-2015) and aligns with the statutory directives issued by the Ministry of Higher Education and Scientific Research (MOHESR) in Iraq.

2. REPORT SUMMARY

2.1 ESG-2015 Standards Assessment

2.1.1 Standard 1: Policy for Quality Assurance

Institutional Governance: Shatt Al-Arab University College maintains a formally documented Quality Assurance Policy published on the official college portal (<https://sa-uc.edu.iq/ar/qa>). The policy defines quality as an all-encompassing institutional culture that spans curriculum design, faculty qualification, student support services, research integrity, and community engagement.

The Quality Assurance Committee (QAC) operates directly under the supervision of the Dean, Assoc. Prof. Dr. Mazin Abdullah Alwan, and the QA University Director, Asst. Lect. Hajar Sahib Shinawa. Internal stakeholders (faculty members, administrative officers, and student representatives) participate actively in bi-monthly quality reviews. External stakeholders, including representatives from Basra oil companies and industrial partners, provide input through the Industrial Advisory Council to ensure curriculum relevance.

2.1.2 Standard 2: Design and Approval of Programmes

Bologna Curriculum Architecture: The B.Sc. program in Fuel and Energy Engineering Techniques is designed to satisfy the four core purposes of higher education set forth in ESG-2015: preparing students for sustainable employment, active citizenship, personal development, and maintaining an advanced knowledge base. The curriculum structure strictly follows the Iraqi Bologna Process framework, comprising 38 ECTS modules across 8 semesters (4 stages).

Each core module is assigned a Student Workload (SWL) of 150 hours per semester, corresponding to 5 or 6 ECTS credits. The curriculum was established pursuant to Ministry Approval Letter No. H A Q / 4406 and operates under a formal Twinning Agreement with the Technical Engineering College / Baghdad (Middle Technical University). This agreement guarantees standardized course specifications, shared examination frameworks, and credit transferability.

2.1.3 Standard 3: Student-Centered Learning, Teaching and Assessment

Pedagogical Execution & Grading: The department adopts a student-centered pedagogical model that transitions from passive lecturing to problem-based learning, interactive seminar discussions, and intensive laboratory experimentation. Assessment is divided equally into 50% Formative Assessment (continuous quizzes, mid-term practical exams, lab reports, homework assignments, and seminar presentations) and 50% Summative Assessment (final comprehensive theoretical and practical examinations).

To respect student diversity and varying learning paces, teachers utilize the Shatt Al-Arab Bologna LMS Platform to publish lecture notes, video tutorials, and interactive discussion forums. A formal student grievance procedure allows students to appeal grades within 5 business days, ensuring complete transparency and fairness.

2.1.4 Standard 4: Student Admission, Progression, Recognition and Certification

Lifecycle Management: Admission to the department is managed centrally by the Ministry of Higher Education and Scientific Research based on secondary school GPA and specialization prerequisites. Transfer rules between colleges are clearly documented. Student progression across Stage 1, Stage 2, Stage 3, and Stage 4 is tracked automatically via the Bologna LMS platform based on ECTS accumulation.

Graduating students receive an official Diploma Supplement in both Arabic and English, detailing module codes, title descriptions, SWL hours, ECTS credits earned, and national grade equivalents (A-Excellent to E-Sufficient) to facilitate international academic recognition.

2.1.5 Standard 5: Teaching Staff & API Framework

Faculty Excellence & API Evaluation: The department boasts a highly qualified academic cadre comprising 22 staff members (19 full-time teaching faculty and 3 technical/administrative support officers). Scientific ranks include Professors, Associate Professors, Assistant Professors, Lecturers, and Assistant Lecturers specializing in Chemical Engineering, Mechanical Engineering, Petroleum Engineering, Electrical Engineering, and Physical Sciences.

Faculty performance is evaluated annually using the Academic Performance Indicator (API) framework. The API score incorporates six core criteria: teaching methodology (#1), research output and Scopus publications (#2), departmental administrative duties (#3), student counseling (#4), community service (#5), and peer/HOD evaluation (#6). The complete API evaluation table for all 22 faculty members is attached in Appendix A.

2.1.6 Standard 6: Learning Resources and Student Support (Chemistry Lab LCH0354 Focus)

Infrastructure Overview: The department provides state-of-the-art learning infrastructure including smart classrooms equipped with interactive displays, a central paper and electronic library, computer laboratories, and specialized engineering workshops. The flagship facility established for the department is the newly commissioned Chemistry Laboratory (Code: LCH0354).

Chemistry Laboratory LCH0354 Specifics: Laboratory LCH0354 was formally authorized under Administrative Order No. 976 (and Order No. 45) dated 26/2/2026, issued by Dean Assoc. Prof. Dr. Mazin Abdullah Alwan, following a detailed feasibility study and an investment of 54 Million Iraqi Dinars (54,000,000 IQD). The lab is classified as an Educational/Chemical facility conforming to the Iraqi Quality Standards for Higher Education Laboratories (2nd Edition 2022), ISO 45001 (Occupational Health & Safety), and ISO 14001 (Environmental Management).

- Operational Classification: Educational Laboratory for B.Sc. Undergraduate Studies (Capacity: 25 students per group).
- Assigned Curriculum Modules: Analytical Chemistry, Organic Chemistry, Physical Chemistry, and Environmental Engineering.
- Key Academic & Technical Personnel: Prof. Dr. Kamil Hussein Al-Soudani (Senior Faculty), Asst. Lect. Murtadha Firas Hassan (Lab Supervisor), Asst. Lect. Zahraa Talib Hanno (Faculty Staff), and Res. Asst. Fatima Hassan Abd (Lab Officer).

- Safety & Risk Mitigation: Fume Hood ventilation system, stainless steel emergency eyewash & safety shower unit, 6L foam fire extinguishers, emergency exit doors, and color-coded waste segregation containers (Glass / Paper).



Figure 2.1.6a: Official Chemistry Laboratory (LCH0354) Vision, Mission, and Objectives Poster mounted on the administration partition wall.



Figure 2.1.6b: Side-by-side General Safety Instructions and Chemistry Laboratory Safety Guidelines Posters displayed inside LCH0354.



Figure 2.1.6c: Panoramic wide-angle interior view of Chemistry Laboratory LCH0354 showing central work benches, stools, whiteboard, air conditioning, and fume hood.



Figure 2.1.6d: Central acid/alkali resistant laboratory bench equipped with burette stands, reagent racks, glassware, and ergonomic stainless steel stools.



Figure 2.1.6e: Side storage aisle showing wall-mounted reagent cabinets, granite counter, and dedicated laboratory refrigerator for temperature-sensitive chemicals.



Figure 2.1.6f: Front view of the heavy-duty Fume Hood cabinet with sash glass, digital exhaust controls, electrical outlets, and adjacent foam fire extinguisher.



Figure 2.1.6g: Dedicated Emergency Exit wooden door equipped with panic hardware and an illuminated green safety sign ('EMERGENCY EXIT / مخرج طوارئ').



Figure 2.1.6h: Analytical Precision Electronic Balance (Max 300g, $d=0.001g$) with glass draft shield and official Ministry Calibration & Coding Tag.



Figure 2.1.6i: Visible Spectrophotometer analytical instrument with covered cuvette set for quantitative chemical absorption experiments.



Figure 2.1.6j: Stainless steel floor-mounted Emergency Eyewash and Safety Shower Unit during final assembly and plumbing connection.

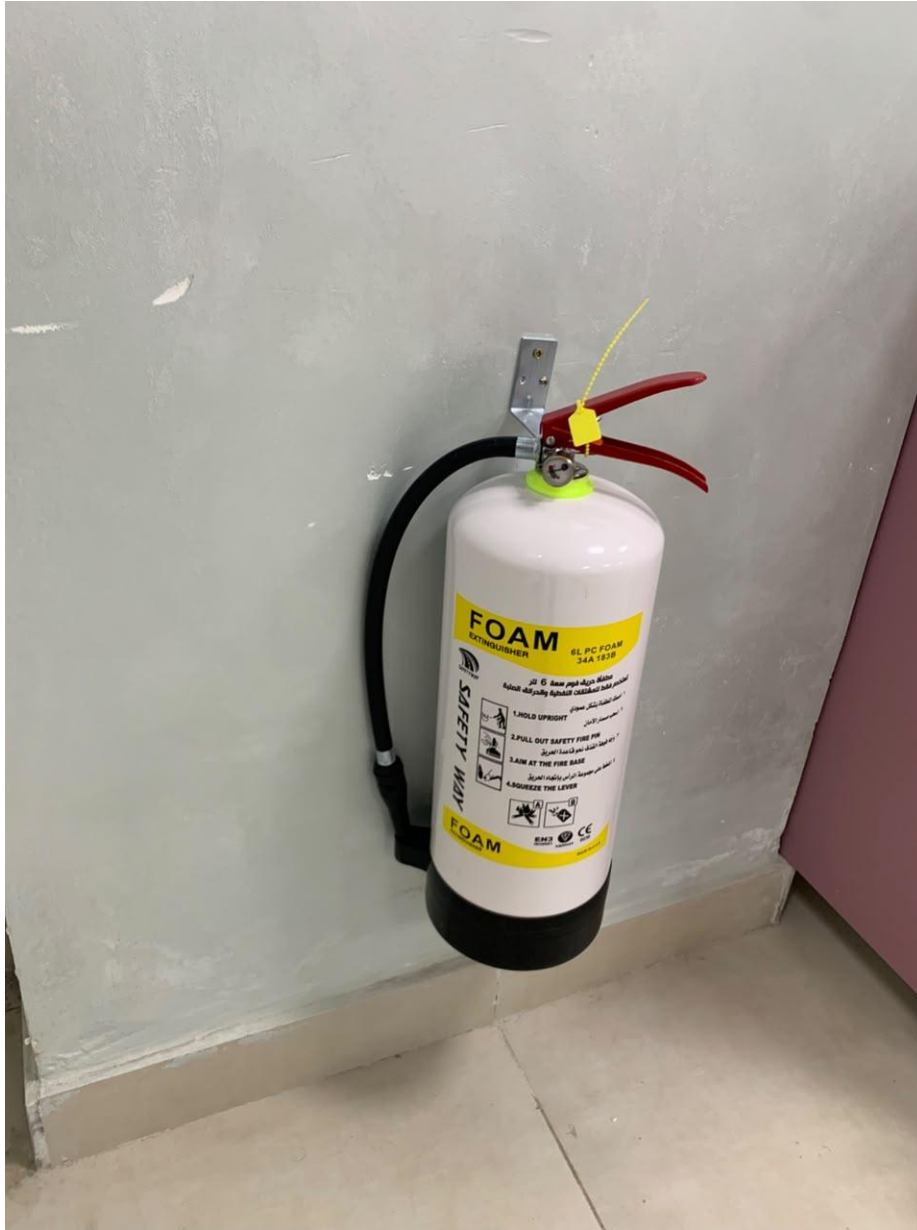


Figure 2.1.6k: Wall-mounted 6L Foam Fire Extinguisher (34A 183B rating) positioned adjacent to chemical handling zones.



Figure 2.1.6I: Color-coded hazardous waste segregation containers: Red bin for Glass Waste ('المهملات الزجاجية') and Yellow bin for Paper Waste ('المهملات الورقية').

Item Name	Asset Tag Code	Origin	Operational Status	Primary Usage
Precision Electronic Balance	5.209 (SN93793038/39)	Made in China	Active / Calibrated (2022)	Analytical Mass Measurement (0.001g sensitivity)
Fume Hood Cabinet	5.18 (Unit 2)	Made in	Active / Verified	Toxic Gas Exhaust &

		China			Volatile Solvent Handling
Hot Plate Stirrer	5.12 (Units 3, 8-11)	Made in China	Active / Verified		Chemical Solution Heating & Magnetic Stirring
Laboratory Drying Oven	5.17 (Unit 7)	Made in China	Active / Verified		Sample Glassware Drying & Thermal Sterilization
Visible Spectrophotometer	5.11 (Unit 1)	Made in China	Active / Calibrated		Quantitative Light Absorbance Analysis
Thermostatic Water Bath	5.13 (Units 5, 12-15)	Made in China	Active / Verified		Controlled Temperature Reaction Incubations
Emergency Shower & Eyewash	LCH-SAF-01	Stainless Steel	Active / Tested		Emergency Chemical Splash Decontamination
6L Foam Fire Extinguisher	LCH-SAF-02	Foam 34A 183B	Active / Inspected		Class A & B Chemical Fire Suppression

2.1.7 Standard 7: Information Management & Student Survey Analytics

Data-Driven Decision Making: The college employs an integrated Information Management System (IMS) that captures key performance indicators regarding student enrollment, progression rates, module pass percentages, and faculty research metrics. Annual student feedback surveys are administered electronically via the Shatt Al-Arab Forms Platform.

Analysis of the recent Student Satisfaction Survey (covering Stage 1, Stage 2, and Stage 3 students in Fuel and Energy Engineering Techniques) indicates high satisfaction ratings across key pedagogical dimensions: 88% positive rating for lecture preparation and clarity, 92% positive rating for assessment transparency, 85% satisfaction with laboratory equipment availability, and 90% positive rating for faculty accessibility during office hours.

2.1.8 Standard 8: Public Information

Shatt Al-Arab University College publishes clear, accurate, and up-to-date information regarding its academic programs on its official website (<https://sa-uc.edu.iq/ar>). Publicly accessible documentation includes program learning outcomes, Bologna module descriptions, admission criteria, tuition fee structures, and the Annual Quality Assurance Report.

2.1.9 Standard 9: On-going Monitoring and Periodic Review of Programmes

At the conclusion of each academic semester, Course Review Reports are submitted by module leaders to the Departmental Quality Committee. The committee evaluates student pass rates, grade

distributions, and student feedback to identify required curriculum refinements. External examiners from Twinning Partner institutions review examination papers and grading consistency annually.

2.1.10 Standard 10: Cyclical External Quality Assurance

The department actively prepares for national programmatic accreditation administered by the Iraqi Accreditation Council for Engineering and Technical Education and international ABET accreditation. All evidence dossiers, lab self-assessment reports, and faculty portfolios are maintained in audit-ready condition.

2.2 General Statistics on Student Achievement, Marks and Grade

The following tables summarize student participation, pass rates, and performance statistics across the three active academic stages in the Department of Fuel and Energy Engineering Techniques for the academic year 2025–2026:

Academic Stage & Study Shift	Total Enrolled	Students Examined	Passed Students	Failed Students	Pass Rate (%)
Stage 1 - Morning Study	142	142	138	4	97.18%
Stage 1 - Evening Study	222	222	215	7	96.84%
Stage 1 Combined Total	364	364	353	11	96.97%
Stage 2 - Morning Study	124	124	121	3	97.58%
Stage 2 - Evening Study	140	140	135	5	96.42%
Stage 2 Combined Total	264	264	256	8	96.96%
Stage 3 - Morning Study	266	266	260	6	97.74%
Grand Total All Stages	894	894	869	25	97.20%

2.3 General Statistics on Research & SDG 2023 Alignment

Research productivity is a primary pillar of the departmental strategic plan. Faculty members are required to align their scientific output with global citation databases (Scopus and Web of Science) and address the United Nations Sustainable Development Goals (SDGs). Key research statistics for 2025–2026 include:

- Total Published Research Papers: 14 papers in international peer-reviewed journals.
- Scopus Indexed Publications: 9 papers published in Scopus Q1/Q2 energy and chemical engineering journals.
- Web of Science (Clarivate) Indexed: 4 papers in WoS indexed engineering publications.
- Multidisciplinary Research: 5 joint papers collaborating with local Basra petroleum refineries and chemical plants.
- Sustainable Development Goals Alignment: Research focuses on SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 13 (Climate Action).

2.4 General Recommendations and Operational Enhancement Plan

Based on the internal self-assessment findings and student survey analytics, the Quality Assurance Committee outlines the following priority enhancement actions for 2025–2026:

No.	Identified Focus Area	Proposed Operational Action	Responsible Entity	Target Timeline
1	Laboratory Expansion	Procure pilot-scale biofuel testing rig and gas chromatography unit for LCH0354.	College Dean + HOD	Semester 1 (2025-2026)
2	Scopus Research Support	Establish incentive fund covering APC fees for high-impact Scopus Q1 energy journals.	Dean + Scientific Comm.	Continuous
3	Industrial Advisory Council	Convene bi-annual meeting with South Oil Company & Basra Oil Refineries.	HOD + External Committee	November 2025 / April 2026
4	E-Library Integration	Expand digital subscription to ScienceDirect and IEEE Xplore for students.	Central Library Director	December 2025
5	Safety Refresher Training	Conduct mandatory Civil Defense fire suppression & eyewash drill for all students.	Civil Defense Unit + Lab Staff	Beginning of Each Semester

2.5 List of Programs Following Bologna Process

The following academic departments at Shatt Al-Arab University College currently operate under the Iraqi Bologna Process framework:

- Department of Fuel and Energy Engineering Techniques (قسم هندسة تقنيات الوقود والطاقة)

- Department of Computer Engineering Techniques (قسم هندسة تقنيات الحاسوب)
- Department of Civil Engineering Techniques (قسم هندسة تقنيات البناء والإنشاءات)
- Department of Medical Laboratory Techniques (قسم تقنيات المختبرات الطبية)

APPENDIX A: FACULTY ROSTER & ACADEMIC PERFORMANCE INDICATOR (API) REPORT

The following table lists all 22 faculty members assigned to the Department of Fuel and Energy Engineering Techniques for the academic year 2025–2026, detailing their academic ranks, specializations, assigned Bologna modules, and API evaluation scores. Evaluation scores (#1 to #6) are left fillable for official end-of-year marking by the Head of Department and QA Director:

No.	Faculty Name (English & Arabic)	Rank	General / Exact Specialization	Assigned Module	API Criteria (#1-#6)	Final Mark (/20)
1	Prof. Dr. Kamil Hussein Al-Soudani (أ.د. كامل حسين السوداني)	Professor	Chemistry / Analytical Chemistry	Analytical Chemistry	[] [] [] [] [] []	[] / 20
2	Assoc. Prof. Dr. Ali Ahmed Ghani (أ.م.د. علي أحمد غني)	Assoc. Prof.	Chemical Eng. / Energy Tech.	Reactor Design 1 & 2	[] [] [] [] [] []	[] / 20
3	Assoc. Prof. Dr. Haider Nasser Khraibat (أ.م.د. حيدر ناصر خريبط)	Assoc. Prof.	Mechanical Eng. / Thermal Power	Thermodynamics & Heat Transfer	[] [] [] [] [] []	[] / 20
4	Assoc. Prof. Qasim Abdul-Jabbar Al-Salem (أ.م. قاسم عبد الجبار السالم)	Assoc. Prof.	Electrical Eng. / Electronics	Fundamentals of Electrical Eng.	[] [] [] [] [] []	[] / 20
5	Dr. Rashid Sabah Jassim (د.م. رشيد صباح جاسم)	Lecturer	Electrical Eng. / Power & Machines	Electrical Machines & Drives	[] [] [] [] [] []	[] / 20
6	Dr. Ali Kazim Mattar (د.م. علي كاظم مطر)	Lecturer	Computer Eng. / Networks	Computer Applications & Matlab	[] [] [] [] [] []	[] / 20

7	Dr. Asaad Hussein Mukallaf (د.م. أسعد حسين مكلف)	Lecturer	Electrical Eng. / Electronics	Industrial Electronics	[] [] [] [] [] [] []	[/ 20]
8	Dr. Adil Nazim Naim (د.م. عادل ناظم نعيم)	Lecturer	Computer Science / Networks	Information Technology	[] [] [] [] [] [] []	[/ 20]
9	Asst. Lect. Murtadha Firas Hassan (م.م. مرتضى فراس حسن)	Asst. Lect.	Chemistry / Analytical Chemistry	Analytical Chemistry Lab	[] [] [] [] [] [] []	[/ 20]
10	Asst. Lect. Zahraa Talib Hanno (م.م. زهراء طالب هنو)	Asst. Lect.	Chemistry / Biochemistry	Organic Chemistry Lab	[] [] [] [] [] [] []	[/ 20]
11	Asst. Lect. Issam Khalil Ibrahim (م. عصام خليل إبراهيم)	Lecturer	Electrical Eng. / Communications	Communication Principles	[] [] [] [] [] [] []	[/ 20]
12	Asst. Lect. Abdul-Nabi Hussein Ali (م. عبد النبي حسين علي)	Lecturer	Mathematics / Numerical Analysis	Engineering Mathematics 1 & 2	[] [] [] [] [] [] []	[/ 20]
13	Asst. Lect. Abdul-Salam Faisal (م. عبد السلام فيصل)	Lecturer	Electrical Eng. / Communications	Gas Technology	[] [] [] [] [] [] []	[/ 20]
14	Asst. Lect. Hassan Adil Joodah (م.م. حسن عادل جودة)	Asst. Lect.	Computer Eng. / Networks	Python Programming	[] [] [] [] [] [] []	[/ 20]
15	Asst. Lect. Jalal Zia Muhammed (م.م. جلال ضياء محمد)	Asst. Lect.	Computer Eng. / Protocols	Microprocessors	[] [] [] [] [] [] []	[/ 20]
16	Asst. Lect. Jawad Kazim Hussein (م.م. جواد كاظم حسين)	Asst. Lect.	Mechanical Eng. / Fluid Dynamics	Fluid Mechanics	[] [] [] [] [] [] []	[/ 20]
17	Asst. Lect. Hajar Sahib Shinawa (م.م. هاجر صاحب شناوة)	Asst. Lect.	QA / Quality Systems	Quality Assurance & Ethics	[] [] [] [] [] [] []	[/ 20]

18	Asst. Lect. Noor Abdullah (م.م. نور عبد الله)	Asst. Lect.	Physics / Solar Energy	Renewable Energy Tech.	[] [] [] [] [] [] [] []	[/ 20]
19	Asst. Lect. Zeena Haider Jabbar (م.م. زينة حيدر جبار)	Asst. Lect.	English Language / Linguistics	Technical English 1 & 2	[] [] [] [] [] [] [] []	[/ 20]
20	Asst. Lect. Ruqayya Muhammed Ali (م.م. رقية محمد علي)	Asst. Lect.	Arabic Language / Human Rights	Human Rights & Democracy	[] [] [] [] [] [] [] []	[/ 20]
21	Asst. Lect. Muhannad Karim (م.م. مهند كريم)	Asst. Lect.	Computer Science / Software Eng.	Object-Oriented Programming	[] [] [] [] [] [] [] []	[/ 20]
22	Asst. Lect. Noor Kamal Lami (م.م. نور كامل لامي)	Asst. Lect.	Electrical Eng. / Communications	Control Systems Engineering	[] [] [] [] [] [] [] []	[/ 20]

APPENDIX B: ADMINISTRATIVE & TECHNICAL SUPPORT STAFF ROSTER

The following dedicated support cadre manages laboratory preparation, chemical inventory, safety procedures, and departmental administration:

No .	Staff Full Name	Job Title / Role	Degree Qualification	Primary Departmental Responsibilities
1	Amal Salem Ahmed (آمال (سالم أحمد)	Research Assistant (مساعد باحث)	B.Sc. Degree	Laboratory reagent preparation, inventory recording, and glassware sterilization.
2	Fatima Hassan Abd (فاطمة حسن عبد)	Laboratory Officer / Res. Asst. (مسؤول مختبر)	B.Sc. Medical Lab Tech.	Chemistry Lab LCH0354 day-to-day management, chemical logbooks, and eyewash/shower maintenance.
3	Noor Al-Huda Rafid Hashem (نور الهدى رافد هاشم)	Departmental Secretary (سكرتارية)	B.Sc. Degree	Faculty administrative records, student attendance logging, and Quality Assurance archive maintenance.

REPORT APPROVAL & INSTITUTIONAL SIGN-OFF

This Annual Quality Assurance and Enhancement Report has been compiled by the Departmental QA Committee, reviewed by the Quality Assurance University Director, and approved by the Academic Leadership of Shatt Al-Arab University College:

Prepared & Submitted by:

Asst. Lect. Hajar Sahib Shinawa
Director of Quality Assurance Office
Shatt Al-Arab University College
Date: 13 May 2024 / Updated 2026

Approved & Endorsed by:

Assoc. Prof. Dr. Mazin Abdullah Alwan
Dean / Vice President
Shatt Al-Arab University College
Date: 13 May 2024 / Updated 2026