



CONFORMITY AND READINESS REPORT FOR PROGRAMMATIC ACCREDITATION (ABET)

Department of Fuel and Energy Engineering Techniques | Academic Year 2025–2026
Shatt Al-Arab University College

Institutional Metadata Field	Official Record & Accreditation Parameters
Document Title	Conformity and Readiness Report for ABET Programmatic Accreditation
Target Department	Department of Fuel and Energy Engineering Techniques (قسم هندسة تقنيات (الوقود والطاقة
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Accreditation Framework	ABET Engineering Accreditation Commission (EAC) Nine Criteria
Ministerial Authorization	Ministry Letter No. H A Q / 4406 Twinning Agreement with TEC Baghdad
Active Academic Stages	3 Active Stages (Stage 1: 374, Stage 2: 264, Stage 3: 274) Total: 912 Students
Overall Compliance Score	FULL CONFORMITY (مطابقة كاملة) after implementing Continuous Improvement Plan

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1. PROGRAM OVERVIEW & EXECUTIVE SUMMARY

The B.Sc. program in Fuel and Energy Engineering Techniques at Shatt Al-Arab University College was established to address the critical regional and national demand for highly skilled technical engineers in the oil, gas, petroleum refining, and renewable energy sectors. The department operates under formal ministerial authorization (Ministry Letter No. H A Q / 4406) and maintains a comprehensive Twinning Agreement with the Technical Engineering College / Baghdad (Middle Technical University).

This Conformity and Readiness Report presents an exhaustive audit of the department's compliance with the nine programmatic accreditation criteria established by the Engineering Accreditation Commission of ABET. Following a thorough internal self-assessment and the implementation of targeted corrective actions, the department demonstrates FULL CONFORMITY across all accreditation standards.

2. CONFORMITY ASSESSMENT FOR ABET NINE CRITERIA

Criterion 1: Program Educational Objectives (PEOs)

The Department of Fuel and Energy Engineering Techniques maintains four broad Program Educational Objectives (PEOs) that describe the career and professional accomplishments that graduates are expected to attain within 3 to 5 years after graduation:

- **Technical Mastery:** PEO 1: Graduates demonstrate technical competence in designing, operating, and optimizing fuel processing, petroleum refining, and energy conversion systems.
- **Professional Leadership:** PEO 2: Graduates advance into leadership and managerial roles within regional oil gas corporations, engineering consultancies, and governmental energy ministries.
- **Lifelong Growth:** PEO 3: Graduates engage in continuous professional development, lifelong learning, specialized technical certifications, and post-graduate studies.
- **Ethical Responsibility:** PEO 4: Graduates adhere to strict ethical standards, environmental stewardship, occupational health regulations, and sustainable energy practices.

Degree of Conformity: FULL CONFORMITY (مطابقة كاملة) | Supporting Evidence: Attachments 1, 2, and 3.

Criterion 2: Student Outcomes (SOs)

The program has adopted the seven standardized ABET Student Outcomes (1 through 7) that prepare graduates to enter professional engineering practice:

- SO 1: An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- SO 2: An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare.
- SO 3: An ability to communicate effectively with a range of audiences through technical reports and oral presentations.
- SO 4: An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments.
- SO 5: An ability to function effectively on a team whose members together provide leadership and create a collaborative environment.
- SO 6: An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- SO 7: An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Degree of Conformity: FULL CONFORMITY (مطابقة كاملة) | Supporting Evidence: Attachments 4, 16, 17, 18, 21, and 25.

Criterion 3: Curricula Study & Bologna System

Curriculum Structure & ECTS Credit Allocation: The curriculum spans 4 academic stages (8 semesters) comprising 38 core ECTS modules. The study plan balances fundamental mathematics and natural sciences (Chemistry, Physics, Engineering Mathematics), engineering sciences (Thermodynamics, Fluid Mechanics, Heat Transfer, Materials Science), and specialized energy applications (Oil Refining, Reactor Design, Gas Technology, Renewable Energy, Equipment Design).

The curriculum operates under a formal Twinning Agreement with Middle Technical University, ensuring identical syllabus coverage, joint mid-term examinations, and collaborative moderation. Practical laboratory training accounts for over 35% of total student workload hours.

Degree of Conformity: FULL CONFORMITY (مطابقة كاملة) | Supporting Evidence: Attachments 1, 6, 7, 8, 9, 10, and 25.

Criterion 4: Continuous Improvement (CQI)

CQI Closed-Loop Mechanism: The department adopts a documented Continuous Quality Improvement (CQI) process that systematically collects direct assessment data (exam scores, lab reports, capstone project rubrics) and indirect assessment data (student surveys, alumni feedback, employer evaluations). Identified weaknesses are transformed into actionable improvement plans monitored by the QA Office.

Degree of Conformity: FULL CONFORMITY (مطابقة كاملة) | Supporting Evidence: Attachments 4, 7, 9, 10, 11, and 12.

Criterion 5: Students

Student Support & Progression: Student admission, credit transfer, and progression regulations are clearly documented and consistently enforced in compliance with MOHESR guidelines. The department maintains an Academic Counseling Committee that assigns every student a faculty advisor for academic guidance, career orientation, and psychological support.

Degree of Conformity: FULL CONFORMITY (مطابقة كاملة) | Supporting Evidence: Attachments 14, 15, 19, 20, 21, 22, 23, 24, 25, and 26.

Criterion 6: Academics, Instructors & Faculty Qualifications

Faculty Competence & Size: The program is supported by 22 academic staff members (19 full-time teaching faculty and 3 technical/administrative support officers). Faculty qualifications cover all major energy engineering disciplines. Teaching workloads are strictly capped to allow adequate time for research, student advising, and professional development.

Degree of Conformity: FULL CONFORMITY (مطابقة كاملة) | Supporting Evidence: Attachments 6, 7, 12, 13, 16, 18, 20, 22, 27, 28, 29, 30, and 31.

Criterion 7: Administrative Support & Staff Development

Administrative Ecosystem: Institutional leadership at Shatt Al-Arab University College provides robust administrative services and technical support. Administrative officers undergo regular training in quality management, LMS administration, and civil defense safety procedures.

Degree of Conformity: FULL CONFORMITY (مطابقة كاملة) | Supporting Evidence: Attachments 15, 18, 27, 28, 31, 32, and 42.

Criterion 8: Financial Support & Program Budget

Financial Allocations: The program enjoys sustained financial support from the college board of directors. Capital allocations have funded the establishment of Chemistry Lab LCH0354 (54 Million IQD investment), ongoing equipment maintenance, IT infrastructure upgrades, and faculty research incentives.

Degree of Conformity: FULL CONFORMITY (مطابقة كاملة) | Supporting Evidence: Attachment 41.

Criterion 9: Facilities, Infrastructure & Chemistry Lab LCH0354 Analysis

Facility Infrastructure: Classrooms are equipped with smart interactive displays, split air conditioning, and ergonomic seating. The department features five specialized computer laboratories and a central library. The primary laboratory supporting chemical and energy experiments is the newly commissioned Chemistry Laboratory (Code: LCH0354).

Chemistry Laboratory LCH0354 Audit: Laboratory LCH0354 covers 38.88 sq. meters, equipped with acid-resistant benches, Fume Hood cabinet, draft-shielded analytical balance, spectrophotometer,

thermostatic water baths, stainless steel eyewash/shower, foam fire extinguishers, and emergency exit doors. The facility fully complies with Iraqi Ministry Laboratory Quality Standards (2nd Edition 2022).



Figure 9.1: Comprehensive interior view of Chemistry Laboratory LCH0354 showing central work benches, stools, whiteboard, air conditioning, and fume hood.



Figure 9.2: Central lab bench equipped with glass reagent racks, burette stands, and ergonomic stainless steel stools.



Figure 9.3: Front view of the Fume Hood cabinet showing digital ventilation control panel and sash glass.



Figure 9.4: Analytical Precision Electronic Balance (0.001g) with glass draft shield and official Ministry Tag.



Figure 9.5: Visible Spectrophotometer instrument used for quantitative chemical concentration analysis.



Figure 9.6: Stainless steel Emergency Eyewash and Safety Shower Unit installed for chemical splash decontamination.



Figure 9.7: Emergency Exit door equipped with illuminated exit sign and panic opening hardware.



Figure 9.8: Wall-mounted 6L Foam Fire Extinguisher positioned near chemical processing areas.



Figure 9.9: Color-coded hazardous waste segregation containers: Red bin for Glass Waste and Yellow bin for Paper Waste.



Figure 9.10: Official Chemistry Laboratory Vision, Mission, and Objectives Poster (Code LCH0354).

Degree of Conformity: FULL CONFORMITY (مطابقة كاملة) | Supporting Evidence: Attachments 33, 34, 35, 36, 37, 38, 39, and 41.

3. OVERALL EVALUATION & DEGREE OF CONFORMITY TABLE

The overall evaluation confirms that the Department of Fuel and Energy Engineering Techniques at Shatt Al-Arab University College achieves FULL CONFORMITY across all nine ABET programmatic accreditation criteria:

Criterion No.	ABET Accreditation Criterion Title	Conformity Status	Summary Evaluation Findings
Criterion 1	Program Educational Objectives (PEOs)	FULL CONFORMITY	PEOs are documented, aligned with university mission, and reviewed with stakeholders.
Criterion 2	Student Outcomes (SOs)	FULL CONFORMITY	All 7 ABET SOs are mapped, assessed, and integrated into course syllabi.
Criterion 3	Curricula Study & Bologna System	FULL CONFORMITY	38 ECTS modules balanced across math, basic sciences, and core energy engineering.
Criterion 4	Continuous Improvement (CQI)	FULL CONFORMITY	Documented CQI loop utilizes direct and indirect evidence for ongoing enhancements.
Criterion 5	Students	FULL CONFORMITY	Admission, progression, credit transfer, and academic counseling strictly enforced.
Criterion 6	Faculty Qualifications & Workload	FULL CONFORMITY	22 academic staff cover all energy specializations with balanced teaching workloads.
Criterion 7	Administrative Support & Leadership	FULL CONFORMITY	Robust institutional leadership and active staff development programs.
Criterion 8	Financial Support & Budget	FULL CONFORMITY	Sustained funding for lab development (54M IQD for LCH0354) and IT infrastructure.
Criterion 9	Facilities & Infrastructure	FULL CONFORMITY	State-of-the-art Chemistry Lab LCH0354, smart classrooms, e-library, and safety systems.

4. READINESS REPORT & EVIDENCE ATTACHMENTS MATRIX

The following matrix details the 42 official evidence attachments compiled in the audit dossier to prove complete institutional readiness for programmatic accreditation:

Attachment No.	Target Element / Standard Item	Associated ABET Criterion	Verification Status
Attachment 1	Strategic Plan & Program Objectives Documentation	Criterion 1: PEOs	Existing & Fully Effective ✓
Attachment 2	Alignment of PEOs with Institutional Mission Statement	Criterion 1: PEOs	Existing & Fully Effective ✓
Attachment 3	PEO Review Mechanism & Stakeholder Consultation Minutes	Criterion 1: PEOs	Existing & Fully Effective ✓
Attachment 4	Approved Student Outcomes & Performance Rubrics	Criterion 2: SOs	Existing & Fully Effective ✓
Attachment 5	Mapping Student Outcomes to Program Educational Objectives	Criterion 2: SOs	Existing & Fully Effective ✓
Attachment 6	Bologna Course Description Forms (38 ECTS Modules)	Criterion 3: Curriculum	Existing & Fully Effective ✓
Attachment 7	Curriculum Outcomes Matrix & Prerequisites Architecture	Criterion 3: Curriculum	Existing & Fully Effective ✓
Attachment 8	Twinning Agreement with Technical Engineering College / Baghdad	Criterion 3: Curriculum	Existing & Fully Effective ✓
Attachment 9	Student Workload (SWL) & ECTS Credit Calculations	Criterion 3: Curriculum	Existing & Fully Effective ✓
Attachment 10	Course Review Reports & Semester Evaluation Dossiers	Criterion 4: CQI	Existing & Fully Effective ✓
Attachment 11	Four-Year Comprehensive Program Review Documentation	Criterion 4: CQI	Existing & Fully Effective ✓
Attachment 12	Student Feedback Survey Analytics & Action Reports	Criterion 4: CQI	Existing & Fully Effective ✓

Attachment 13	Alumni Survey Analytics & Industry Partner Feedback	Criterion 4: CQI	Existing & Fully Effective ✓
Attachment 14	Student Admission Policy & MOHESR Directives	Criterion 5: Students	Existing & Fully Effective ✓
Attachment 15	Student Enrollment & Gender Distribution Statistics	Criterion 5: Students	Existing & Fully Effective ✓
Attachment 16	Student Transfer & Credit Recognition Regulations	Criterion 5: Students	Existing & Fully Effective ✓
Attachment 17	Transferred Students Transcript Audit Records	Criterion 5: Students	Existing & Fully Effective ✓
Attachment 18	Student Progression & ECTS Accumulation Tracking	Criterion 5: Students	Existing & Fully Effective ✓
Attachment 19	Graduation Requirements Audit Procedures & Verification	Criterion 5: Students	Existing & Fully Effective ✓
Attachment 20	Academic & Career Counseling Committee Directives	Criterion 5: Students	Existing & Fully Effective ✓
Attachment 21	Extracurricular Student Activities & Community Service Log	Criterion 5: Students	Existing & Fully Effective ✓
Attachment 22	Faculty CV Dossier & Scientific Qualification Documents (22 Staff)	Criterion 6: Faculty	Existing & Fully Effective ✓
Attachment 23	Faculty Workload Allocation Sheets & Credit Hours Log	Criterion 6: Faculty	Existing & Fully Effective ✓
Attachment 24	Faculty Development Workshop Certificates & Training Log	Criterion 6: Faculty	Existing & Fully Effective ✓
Attachment 25	Scopus / WoS Published Research Papers Archive	Criterion 6: Faculty	Existing & Fully Effective ✓

Attachment 26	Academic Performance Indicator (API) Evaluation Reports	Criterion 6: Faculty	Existing & Fully Effective ✓
Attachment 27	Administrative Organizational Chart & Office Directives	Criterion 7: Administration	Existing & Fully Effective ✓
Attachment 28	Recruitment & Staffing Guidelines for Academic & Support Cadre	Criterion 7: Administration	Existing & Fully Effective ✓
Attachment 29	Technical & Administrative Staff Training Dossier	Criterion 7: Administration	Existing & Fully Effective ✓
Attachment 30	Program Budget Allocations & Capital Expenditure Records	Criterion 8: Budget	Existing & Fully Effective ✓
Attachment 31	Laboratory LCH0354 Establishment Budget (54M IQD Records)	Criterion 8: Budget	Existing & Fully Effective ✓
Attachment 32	Faculty Office Infrastructure & Technical Supplies Audit	Criterion 9: Facilities	Existing & Fully Effective ✓
Attachment 33	Smart Classroom Interactive Display Inventory & Inspection	Criterion 9: Facilities	Existing & Fully Effective ✓
Attachment 34	Chemistry Laboratory LCH0354 Quality Self-Assessment Report	Criterion 9: Facilities	Existing & Fully Effective ✓
Attachment 35	Laboratory LCH0354 Equipment Inventory & Calibration Certificates	Criterion 9: Facilities	Existing & Fully Effective ✓
Attachment 36	Computer Laboratories Hardware & Software License Records	Criterion 9: Facilities	Existing & Fully Effective ✓
Attachment 37	Civil Defense Inspection & Laboratory Safety Procedures Log	Criterion 9: Facilities	Existing & Fully Effective ✓
Attachment 38	Facility Maintenance Schedule & Equipment Repair Logbooks	Criterion 9: Facilities	Existing & Fully Effective ✓

Attachment 39	Central & E-Library Book Catalog & Digital Access Licenses	Criterion 9: Facilities	Existing & Fully Effective ✓
Attachment 40	Industrial Advisory Council Meeting Minutes & Curriculum Feedback	Criterion 1: PEOs	Existing & Fully Effective ✓
Attachment 41	Chemical & Hazardous Waste Disposal Protocols & Contract	Criterion 9: Facilities	Existing & Fully Effective ✓
Attachment 42	Diploma Supplement Samples (Arabic & English Versions)	Criterion 5: Students	Existing & Fully Effective ✓

5. CONTINUOUS IMPROVEMENT ACTION PLAN FOR UNFULFILLED INDICATORS

Although the department currently achieves full conformity across all major criteria, the continuous improvement framework identifies three target areas for ongoing pre-emptive enhancement prior to the final ABET team visit:

Focus Indicator	Identified Enhancement Opportunity	Corrective Action Plan	Responsible Party	Target Date
SO 3 & SO 4	Community service field applications need further structured documentation.	Incorporate required community energy audit projects into Stage 4 Capstone Projects.	Scientific Committee + Capstone Supervisors	March 2026
Criterion 6	Expand international research collaborations in renewable energy.	Initiate joint Scopus research papers with Twinning Partner (TEC Baghdad) and international co-authors.	HOD + Research Committee	June 2026
Criterion 9	Enhance direct electronic access to digital library databases.	Implement single sign-on access to IEEE Xplore and ScienceDirect via student Bologna LMS accounts.	IT Director + Library Committee	January 2026

ACCREDITATION COMMITTEE ENDORSEMENT

This Conformity and Readiness Report has been audited and approved for submission to the National Engineering Accreditation Council and ABET:

Audited & Submitted by:

Assoc. Prof. Dr. Ali Ahmed Ghani
Head of Fuel and Energy Engineering Dept.
Shatt Al-Arab University College
Date: 13 May 2024 / Updated 2026

Endorsed & Approved by:

Prof. Dr. Taher Mohsin Mansour
President of Shatt Al-Arab University
Shatt Al-Arab University College
Date: 13 May 2024 / Updated 2026