

SELF ASSESSMENT REPORT (S.A.R)

Al-Salam University College

Department of Mechanical Power Engineering Technology

BS in Refrigeration & Air Conditioning Engineering Technology



Self-Assessment Report (S.A.R.)

for the

BS in Refrigeration and Air Conditioning Engineering Technology

Department of Mechanical Power Engineering Technology

Al-Salam University College

Baghdad, Iraq

National Council of Programmatic Accreditation for Engineering Technical Education

NCPAETE

Academic Year 2025 – 2026

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BACKGROUND INFORMATION

1.1 Contact Information

The primary contact for the Mechanical Power Engineering Technology program (BS in Refrigeration and Air Conditioning Engineering Technology):

Item	Details
Department Name	Department of Mechanical Power Engineering Technology
College	Al-Salam University College
Location	Baghdad, Iraq
Department Head	Assist. Prof. Dr. Ali Yousif Al-Maliki
Phone	07704449593
Email	alsalamuniversity@alsalam.edu.iq
College Website	https://alsalam.edu.iq/
Department Page	https://alsalam.edu.iq/department/power-mechanical-engineering/
The committee of writing SAR report	https://short-url.cc/1xS4z

Evidence Table BG-1: Contact Information

Item	Evidence / Document Name	Link
Contact information	Faculty_Members_of_the_Department.docx	https://alsalam.edu.iq/department/power-mechanical-engineering/
College official information	College website (alsalam.edu.iq)	https://alsalam.edu.iq/
The committee	Names of the committee of writing SAR report	https://short-url.cc/1xS4z

1.2 Program History

The Department of Refrigeration and Air Conditioning Engineering Technology was established during the 2018–2019 academic year as one of the specialized engineering programs at Al-Salam University College, a private institution affiliated with the Iraqi Ministry of Higher Education and Scientific Research. The program aims to prepare highly qualified technical engineers with advanced competencies in the application of modern technologies for the design, implementation, operation, and maintenance of refrigeration and air conditioning systems. On November 30, 2025, the Ministry approved the change of the department's name to the Department of Mechanical Power Engineering Technology.

Mission of Al-Salam University College

- Qualifying graduates while adopting contemporary educational technology and meeting labor market needs.
- Upgrading scientific research by creating an appropriate environment for academics and researchers.
- Establishing bridges of active communication and cooperation with the local community.
- Adopting reliable standards in teaching and learning to ensure quality education and academic accreditation.
- Having strategic leadership with an effective administrative system.

Mission of the RACET Program

The Department seeks to educate students and provide them with expertise in the field of refrigeration and air conditioning engineering technologies, preparing qualified technical engineers capable of designing, implementing, and maintaining HVAC systems; applying modern technologies and sustainable practices; and contributing to Iraq's scientific and economic development.

1.3 Program Options

The degree awarded is a Bachelor of Science in Refrigeration and Air Conditioning Engineering Technology (B.S.) — a 4-year full-time engineering technology program following the Bologna Process for Years 1–3 (30 ECTS per semester, 1 ECTS = 25 hours) and the annual system for Year 4 (43 credit units).

1.4 Program Delivery Modes

- On-Campus Instruction (Primary): Day (morning) and evening classes at Al-Salam University College, Baghdad.
- Bologna Process: Years 1–3, semester-based, 30 ECTS per semester, 15 weeks per semester plus examination week.
- Annual System: Year 4, combining theoretical and practical coursework, 43 credit units.
- Practical Components: Laboratory sessions, summer internship/training programs, workshops.

Evidence Table BG-2: Program History and Establishment

Evidence Table BG-3: Program Delivery Modes

Item	Evidence / Document Name	Link
Curriculum structure	Comprehensive_Integrated_Plan.docx	https://shorturl.at/nCdVD
Block diagrams of lessons	Block_Diagrams_of_All_Lessons.docx	https://shorturl.at/afGDQ

1.5 Program Locations

All courses are delivered at Al-Salam University College main campus in Baghdad, Iraq. Summer training is conducted at local refrigeration, air conditioning, and industrial facilities throughout Iraq.

1.6 Public Disclosure

Program information (PEOs, SOs, enrollment and graduation data) is publicly accessible at:

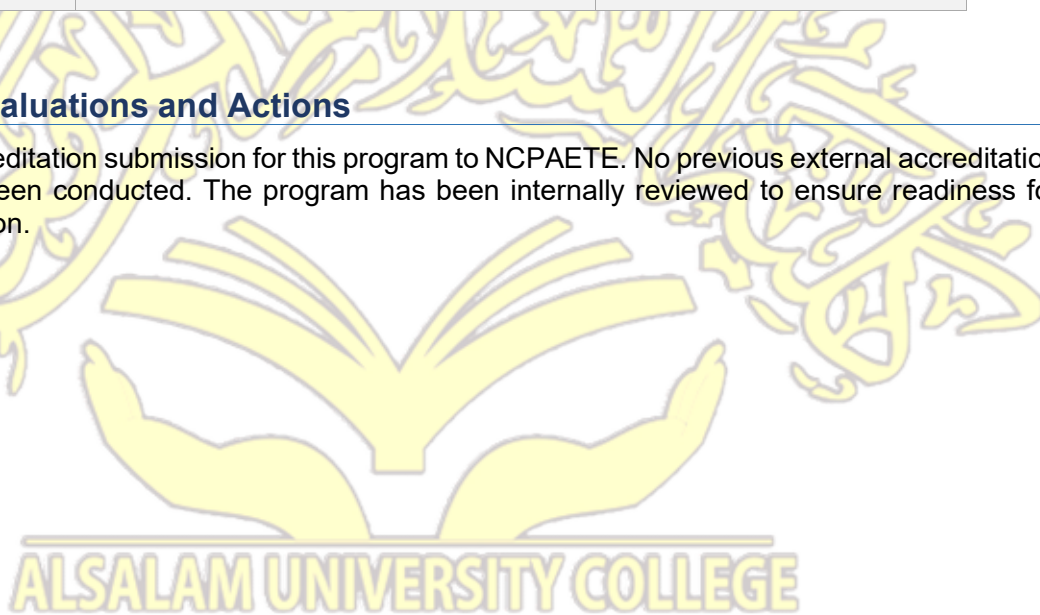
- College website: <https://alsalam.edu.iq/>

Evidence Table BG-4: Public Disclosure

Item	Evidence / Document Name	Link
PEOs and SOs	PEOs and SOs official doc	https://shorturl.at/pi64z
Enrollment and graduation data	Student_and_graduate_statistics.	https://h1.nu/1sOi5

1.7 Previous Evaluations and Actions

This is the first accreditation submission for this program to NCPAETE. No previous external accreditation evaluations have been conducted. The program has been internally reviewed to ensure readiness for external accreditation.



CRITERION 1. STUDENTS

1.1 Student Admissions

Students are admitted through the centralized Ministry of Higher Education and Scientific Research admission system:

Minimum GPA and Entry Pathways

- Scientific / Applied Branch Graduates: Minimum high school average of 58%.
- Vocational Preparatory School Graduates (Industrial/Technical Drawing): Minimum average of 60–62%.
- Technical Institute Graduates (RACET specialization): Minimum average of 65%.

Admission Process

1. Ministry issues admission lists based on national entrance scores and high school averages.
2. Students distributed among departments based on preferences and capacity.
3. Department creates final registration lists; an objection period allows appeals.
4. Post-registration adjustments processed for re-nomination and transfer requests.

Evidence Table 1-1: Student Admissions

Item	Evidence / Document Name	Link
Admission policy documentation	Comprehensive_Integrated_Plan.docx	https://shorturl.at/Jz9kc
Student registration procedures	[Registration Guidelines]	https://shorturl.at/TBYxL

1.2 Evaluating Student Performance

Student performance is evaluated through a structured assessment system:

- Attendance and laboratory participation.
- Classroom activities and practical engagement.
- Laboratory performance: practical work, experiments, and reports.
- Semester examinations; second-round examinations with a 10-point deduction applied.
- Summer training performance evaluation.

Graduation Average Calculation (Weighted)

Academic Year	Example Average	Weight (%)	Contribution
Year 1	70.8	10%	7.08
Year 2	72.5	20%	14.50

Academic Year	Example Average	Weight (%)	Contribution
Year 3	75.3	30%	22.59
Year 4	78.2	40%	31.28
Final Graduation Average			75.45

Evidence Table 1-2: Student Performance Evaluation

Item	Evidence / Document Name	Link
Student evaluation procedures	Comprehensive_Integrated_Plan.docx	https://shorturl.at/Jz9kc
Sample student transcripts	Student_and_graduate_statistics.	https://h1.nu/1sOi5
Examination schedules	[2025-2026 Exam Calendar]	https://shorturl.at/XzNdv

1.3 Transfer Students and Transfer Courses

1. Students may transfer between corresponding departments after obtaining original college approval.
2. Transfers allowed between universities within one governorate or corresponding colleges within one university.
3. Students in the first and final year are not eligible to transfer.
4. Transfer procedures initiated exclusively from the original college.
5. Academic records and completed units forwarded with the transfer application.
6. Scientific clearing completed within two weeks of receiving the student's academic file.

Evidence Table 1-3: Transfer Policies

Item	Evidence / Document Name	Link
Transfer regulations	Comprehensive_Integrated_Plan.docx	https://shorturl.at/Jz9kc
Scientific clearing procedures	[Scientific Clearing Guidelines]	https://short-url.cc/1xRZH

1.4 Advising and Career Guidance

The college has established a centralized Undergraduate Advising Unit providing academic planning, course selection guidance, technical elective selection, career pathway planning, and academic performance support. The Department established a Committee for Educational and Psychological Counseling (Administrative Order No. 7/18/284, dated 22/10/2024) providing educational support, psychological counseling, career advising, and student well-being promotion.

Evidence Table 1-4: Advising and Career Guidance

Item	Evidence / Document Name	Link
Counseling committee charter	Educational_Supervision_Committees.	https://shorturl.at/WSSwY
Undergraduate Advising Unit	1. centralized Undergraduate Advising Unit document (<u>First Point: Establishment of the Rehabilitation and Employment Division</u>) 2. Establishment of the Psychological Counseling Unit	https://shorturl.at/uouj1 https://h1.nu/1t26y

1.5 Work Instead of Courses

The RACET program does not currently award credit for work experience in place of course requirements. All students must complete the required curriculum as specified. Summer internship and training programs provide practical experience but are not substituted for required coursework.

1.6 Graduation Requirements

- Complete all required coursework in Years 1–3 (180 ECTS credits, Bologna Process).
- Complete all required courses in Year 4 (43 credit units, Annual System).
- Achieve minimum passing grade in all required courses.
- Complete two summer training periods.
- Complete the senior capstone/design project in Year 4.
- Satisfy all general education requirements and comply with all college academic policies.

Degree Awarded: Bachelor of Science in Refrigeration and Air Conditioning Engineering Technology

Evidence Table 1-6: Graduation Requirements

Item	Evidence / Document Name	Link
Graduation requirements checklist	Graduation_Certificate.docx	https://shorturl.at/vouyM
Sample graduation documents	Graduation_Certificate.	https://shorturl.at/vouyM
Graduate records	Student_and_graduate_statistics.	https://h1.nu/1sOi5

1.7 Records of Student Work / Transcripts

Al-Salam University College maintains comprehensive official academic records for all RACET program students, including: institution name and address; student identification; complete academic record (courses, credits, years, grades, required work); transferred course equivalencies; and a graduation statement certifying program completion, degree name, level, and award date.

Table 1-7: Program Enrollment Data

No.	Academic Year	1st Year	2nd Year	3rd Year	4th Year	Total	Grads (M)	Grads (E)
1	2021-2022	454	440	478	97	1,469	1	96
2	2022-2023	411	446	434	473	1,764	12	200
3	2023-2024	272	394	434	473	1,573	14	445
4	2024-2025	280	272	367	447	1,633	19	417
5	2025-2026	346	426	238	373	1,383	—	—

M = Morning Study E = Evening Study

Evidence Table 1-7: Student Records and Transcripts

Item	Evidence / Document Name	Link
Enrollment and graduation statistics	Student_and_graduate_statistics.docx	https://h1.nu/1sOi5
Official transcripts (sample)	[Graduate Transcript Sample 2024]	https://shorturl.at/vouyM
Graduation certificates	Graduation_Certificate.docx	https://shorturl.at/vouyM

ALSALAM UNIVERSITY COLLEGE

CRITERION 2. PROGRAM EDUCATIONAL OBJECTIVES

2.1 Mission Statement

Al-Salam University College is committed to providing high-quality higher education that prepares graduates to meet the demands of the labor market and contribute to the development of Iraqi society. The college's mission focuses on: qualifying graduates using contemporary educational technology; upgrading scientific research; establishing community communication; adopting reliable quality standards; and strategic leadership with an effective administrative system.

Evidence Table 2-1: Mission Statement

Item	Evidence / Document Name	Link
Institutional mission statement	College website (alsalam.edu.iq)	https://alsalam.edu.iq/about/
College strategic plan	[Strategic Plan Document]	https://h1.nu/1y0Wr

2.2 Program Educational Objectives (PEOs)

The PEOs describe what graduates are expected to attain within three to five years of graduation. PEOs are publicly available on the college website and department page.

Evidence Table 2-2: (PEOs)

PEO #	Program Educational Objective
PEO 1	Graduates will apply technical knowledge and engineering principles in the design, analysis, and operation of refrigeration and air conditioning systems in professional and industrial settings.
PEO 2	Graduates will demonstrate proficiency in maintaining, troubleshooting, and optimizing HVAC systems to ensure reliable and energy-efficient performance in residential, commercial, and industrial applications.
PEO 3	Graduates will engage in lifelong learning, professional development, and continuing education to remain current with advances in refrigeration, air conditioning, and sustainable energy technologies.
PEO 4	Graduates will function effectively as members or leaders of multidisciplinary engineering teams, demonstrating strong communication skills, ethical judgment, and professional responsibility.
PEO 5	Graduates will contribute to Iraqi society by applying sustainable engineering practices, environmental awareness, and innovative solutions to real-world HVAC and thermal engineering challenges.

Evidence Table 2-2: PEOs

Item	Evidence / Document Name	Link
Committee of writing PEO	PEO Committee	https://h1.nu/1yjeH
PEO review documentation	[PEO Review Records]	https://h1.nu/1yjfp

2.3 Consistency of PEOs with Institutional Mission

PEO	Institutional Mission Element	Alignment Description
PEO 1	Qualifying graduates to meet labor market needs	Prepares engineers for direct employment in the HVAC industry
PEO 2	Adopting contemporary educational technology	Integrates modern HVAC technologies and practical laboratory training
PEO 3	Upgrading scientific research environment	Encourages lifelong learning and engagement with current research
PEO 4	Strategic leadership and effective administration	Develops team leadership, communication, and professional responsibility
PEO 5	Active communication with local community	Promotes contribution to Iraqi society through sustainable engineering

2.4 Program Constituencies

Constituency	Role in PEO Review	How PEOs Meet Their Needs
Program Faculty	Annually review and propose PEO revisions	PEOs reflect current engineering knowledge
Students	Provide feedback through surveys	PEOs prepare students for careers and further study
Employers / Industry Partners	Provide graduate competency feedback	PEOs address key technical and professional skills
Alumni	Share post-graduation career outcomes	PEOs align with competencies needed for career success
Advisory Committee	Provide strategic guidance on program direction	PEOs reflect current and future HVAC engineering trends

2.5 Process for Review of PEOs

1. Data Collection: Surveys administered to employers, alumni, and students.
2. Faculty Review: Annual faculty committee review of collected data and PEO relevance.

3. Advisory Committee Input: Industry-based feedback during scheduled meetings.
4. Revision and Approval: Proposed revisions reviewed by Department Head, College Dean, and Academic Council.
5. Documentation and Communication: Approved PEOs updated on college website and communicated to stakeholders.

Evidence Table 2-3: PEO Review Process

Item	Evidence / Document Name	Link
Constituency survey instruments	[Student / Employer / Alumni Survey Forms]	https://h1.nu/1sOcq
Committees	Department Committee Department meetings & scientific committee	https://shorturl.at/SdoV5 https://short-url.cc/1snK-



CRITERION 3. STUDENT OUTCOMES

3.1 Process for the Establishment and Revision of Student Outcomes

1. Initial Development: SOs developed by program faculty based on NCPAETE BS criteria, mapped to PEOs, and informed by industry standards.
2. Stakeholder Validation: Draft SOs reviewed by the Advisory Committee and industry partners.
3. Formal Adoption: SOs formally adopted by the Department Council and approved by the College Academic Council.
4. Periodic Review: SOs reviewed annually by program faculty and revised as needed.
5. Documentation: Current SOs documented in academic publications and publicly accessible on the department webpage.

3.2 Student Outcomes

Upon completion of the program, graduates will demonstrate the following Student Outcomes:

SO #	Student Outcome
SO 1	An ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering technology problems appropriate to the discipline.
SO 2	An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering technology problems appropriate to the discipline.
SO 3	An ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments, and an ability to identify and use appropriate technical literature.
SO 4	An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes.
SO 5	An ability to function effectively as a member as well as a leader on technical teams.
SO 6	An ability to identify, analyze, and solve broadly-defined engineering technology problems.
SO 7	An ability to apply knowledge of engineering technology to assess local and global impacts of engineering solutions on individuals, organizations, and society.
SO 8	A recognition of the need for and an ability to engage in self-directed continuing professional development.
SO 9	An ability to understand and commit to addressing professional and ethical responsibilities including a respect for diversity.
SO 10	A commitment to quality, timeliness, and continuous improvement.
SO 11	An ability to apply principles of sustainability and environmental responsibility in refrigeration and air conditioning engineering technology.

Evidence Table 3-1: Student Outcomes

Item	Evidence / Document Name	Link
Student Outcomes	POC and student outcome Department meetings	https://h1.nu/1sOcS https://h1.nu/1yjgF

3.3 Mapping of Student Outcomes to Criterion 3 Requirements

Criterion 3 Element	Requirement Description	Program SO(s)
Element 1	Apply knowledge of mathematics, science, engineering, and technology	SO 1
Element 2	Design systems or processes meeting specified needs	SO 2
Element 3	Apply written, oral, and graphical communication	SO 3
Element 4	Conduct standard tests, measurements, and experiments	SO 4
Element 5	Function effectively as a member/leader on technical teams	SO 5
Element 6	Identify, analyze, and solve engineering technology problems	SO 6
Element 7	Apply knowledge to assess local and global impacts	SO 7
Element 8	Engage in self-directed continuing professional development	SO 8
Element 9	Understand professional and ethical responsibilities	SO 9
Element 10	Commitment to quality, timeliness, and continuous improvement	SO 10



CRITERION 4. CONTINUOUS IMPROVEMENT

4.1 Documentation of Processes

The RACET program maintains a systematic and documented process for regularly assessing and evaluating the extent to which Student Outcomes are attained:

- **Assessment:** Multiple direct measures (exams, lab rubrics, design project evaluations, capstone assessments) and indirect measures (course evaluations, exit surveys, alumni surveys, employer feedback) are used for each SO.
- **Evaluation:** Collected data are evaluated against established performance targets by program faculty at year-end.
- **Continuous Improvement:** Where attainment falls below targets, the faculty committee identifies and implements corrective actions.
- **Documentation:** All assessment data, evaluations, and improvement actions are documented in the program's assessment database and faculty meeting minutes.

4.2 Student Outcome Assessment and Methods

The following table summarizes assessment methods for each Student Outcome:

SO #	Performance Indicator(s)	Courses / Activities	Assessment Method	Frequency
SO 1	Exam scores in math and engineering sciences; MATLAB assignment quality	MPAC100, MPAC109, MPAC203, MPAC202, MPAC303	Course exams, MATLAB assignments, lab reports	Every semester
SO 2	Quality of HVAC design projects; capstone project design evaluation	MPAC205, MPAC304, MPAC308, Y4 Project	Design project rubrics, capstone evaluation	Every semester
SO 3	Technical report quality; oral presentation scores; drawing accuracy	MPAC308, MPAC306, Y4 Project	Report rubrics, presentation rubrics, drawing assessment	Every semester
SO 4	Laboratory experiment performance; data analysis quality	MPAC205, MPAC304, MPAC303, MPAC306	Lab performance rubrics, lab report evaluation	Every semester
SO 5	Team project participation; peer evaluation scores	Y4 Project, MPAC306, MPAC308	Team project rubrics, peer evaluation forms	Annually

SO #	Performance Indicator(s)	Courses / Activities	Assessment Method	Frequency
SO 6	Problem-solving in core courses; troubleshooting performance	MPAC205, MPAC304, MPAC306, Y4 Capstone	Exam analysis questions, troubleshooting rubrics	Every semester
SO 7	Environmental impact discussions; sustainability in design; ethics questions	Renewable Energy, Engineering Ethics, MPAC304	Essay rubrics, exam questions, project assessments	Annually
SO 8	Workshop participation; self-assessment in exit surveys	All courses (cumulative), Exit Survey	Student activity records, exit survey	Annually
SO 9	Professional conduct evaluations; ethics assessment	Engineering Ethics, Y4 Project	Ethics evaluations, conduct assessments	Annually
SO 10	Continuous assessment scores; quality of submitted work	All program courses	Continuous assessment, QA reviews	Every semester
SO 11	Sustainability integration in design; renewable energy applications	Renewable Energy, MPAC304	Project assessments, sustainability rubrics	Annually

4.3 Assessment Schedule and Frequency

SO #	Primary Assessment Method	Frequency	Data Collection	Responsible Party
SO 1	Course exams & MATLAB assignments	Every semester	Fall & Spring	Course Instructors
SO 2	Design project rubrics	Every semester	Fall & Spring	Course Instructors
SO 3	Report & presentation rubrics	Every semester	Fall & Spring	Course Instructors
SO 4	Laboratory performance rubrics	Every semester	Fall & Spring	Lab Instructors
SO 5	Peer evaluations & team rubrics	Annually	Spring	Course Coordinators
SO 6	Problem-solving exams & capstone	Every semester	Fall & Spring	Course Instructors
SO 7	Ethics/impact assessments	Annually	Spring	Faculty Committee

SO #	Primary Assessment Method	Frequency	Data Collection	Responsible Party
SO 8	Exit surveys & activity logs	Annually	End of Year 4	Department Head
SO 9	Professional conduct evaluations	Annually	Spring	Faculty Committee
SO 10	Continuous assessment & QA reviews	Every semester	Fall & Spring	Faculty Committee
SO 11	Sustainability integration assessments	Annually	Spring	Course Instructors

4.4 Evaluation

Assessment data are evaluated annually by the faculty committee against established performance targets. The evaluation process includes:

1. Data Aggregation: Assessment data from all PIs for each SO compiled at year-end.
2. Performance Analysis: Faculty committee analyzes attainment data and compares results against targets (typically $\geq 70\%$ of students scoring $\geq 60\%$).
3. Trend Analysis: Year-over-year trends tracked to identify patterns of improvement or decline.
4. Evaluation Report: Formal report summarizing SO attainment levels and areas requiring improvement.
5. Communication: Results communicated to all program faculty, Department Head, and College Dean.

Note: As this is the first accreditation submission, comprehensive longitudinal assessment data are currently being established. The program is implementing its assessment framework and will have full assessment cycles completed within two academic years.

4.5 Using Results for Continuous Improvement

1. Identify Issues: SOs with attainment below established targets flagged for review.
2. Root Cause Analysis: Faculty committee investigates reasons for underperformance.
3. Develop Improvement Actions: Curriculum modifications, resource additions, or revised teaching approaches identified.
4. Implement Changes: Approved changes implemented in the following academic year.
5. Monitor Results: Effectiveness of changes monitored in subsequent assessment cycles.
6. Document Actions: All deliberations, decisions, and actions documented in faculty meeting minutes and program improvement log.

4.6 Using Other Input for Continuous Improvement

- Employer Feedback: Regular feedback from employers on graduate competencies.

- Alumni Surveys: Biennial surveys on relevance and adequacy of education.
- Advisory Committee Recommendations: Annual recommendations on curriculum and program direction.
- Student Feedback: Ongoing collection through course evaluations and satisfaction surveys.

Evidence Table 4-1: Continuous Improvement Documentation

Item	Evidence / Document Name	Link
Assessment instruments (surveys)	[Assessment Survey Forms]	https://h1.nu/1sOei
Faculty committee meeting minutes	[Faculty Meeting Minutes — Assessment Review]	https://h1.nu/1yJgF
Annual evaluation reports	[Annual Program Evaluation Report] At the End of the report	https://h1.nu/1sOeG
Program improvement action log	[Program Improvement Log]	https://h1.nu/1sOeG
Advisory committee recommendations	[Advisory Committee Meeting Minutes]	https://h1.nu/1yJgF



CRITERION 5. CURRICULUM

5.1 Program Curriculum

The BS in RACET curriculum provides a comprehensive foundation in mathematics, physical sciences, and engineering technology, along with specialized knowledge in refrigeration and air conditioning systems. The curriculum follows the Bologna Process for Years 1–3 (30 ECTS per semester) and the annual system for Year 4 (43 credit units).

Table 5-1: Complete Curriculum Plan

Code	Module / Course Title	Type	SSWL	USSWL	ECTS/Units	Year-Sem	Pre-Req
	YEAR 1 — SEMESTER 1 (30 ECTS)						
MPAC100	Mathematics	S	87	113	8	Y1-S1	—
MPAC101	Engineering Drawing	C	88	62	6	Y1-S1	—
MPAC102	Workshops	C	116	84	8	Y1-S1	—
MPAC103	Engineering Materials	C	60	90	6	Y1-S1	—
MTU1002	English 1	S	45	5	2	Y1-S1	—
	YEAR 1 — SEMESTER 2 (30 ECTS)						
MPAC107	Electrical Engineering	C	88	87	7	Y1-S2	—
MPAC108	Engineering Mechanics	C	59	141	8	Y1-S2	—
MPAC109	Thermodynamics 1	C	144	56	8	Y1-S2	—
MTU1006	Human Rights and Democracy	B	30	20	2	Y1-S2	—
MTU1001	Arabic 1	B	30	20	2	Y1-S2	—
MTU1004	Computer Principles	E	60	15	3	Y1-S2	—
	YEAR 2 — SEMESTER 3 (30 ECTS)						
MPAC200	Advanced Mathematics	S	74	76	6	Y2-S3	MPAC100

Code	Module / Course Title	Type	SSWL	USSWL	ECTS/Units	Year-Sem	Pre-Req
MPAC201	Mechanical Drawing	C	88	62	6	Y2-S3	MPAC101
MPAC202	Fluid Mechanics	C	116	34	6	Y2-S3	—
MPAC203	Thermodynamics 2	C	158	92	10	Y2-S3	MPAC109
MTU1007	Ba'ath Regime Crimes	S	30	20	2	Y2-S3	—
	YEAR 2 — SEMESTER 4 (30 ECTS) + Summer Training						
MPAC205	Refrigeration & Air Conditioning 1	C	144	156	12	Y2-S4	—
MPAC206	Strength of Materials	C	116	159	11	Y2-S4	MPAC108
MTU1005	Computer Application 1	S	60	15	3	Y2-S4	—
MTU1003	English 2	S	44	6	2	Y2-S4	MTU1002
MTU1009	Arabic 2	B	30	20	2	Y2-S4	MTU1001
MPAC210	Summer Training 1	C	394	356	30	Summer	—
	YEAR 3 — SEMESTER 5 (30 ECTS)						
MPAC300	Engineering & Numerical Analysis	S	59	41	4	Y3-S5	MPAC200
MPAC301	Computer Applications 2	S	60	15	3	Y3-S5	—
MPAC302	Theory of Machines and Vibrations	C	116	9	5	Y3-S5	—
MPAC303	Heat Transfer	C	116	84	8	Y3-S5	—
MPAC304	Refrigeration & Air Conditioning 2	C	116	134	10	Y3-S5	MPAC205
	YEAR 3 — SEMESTER 6						

Code	Module / Course Title	Type	SSWL	USSWL	ECTS/Units	Year-Sem	Pre-Req
	(30 ECTS) + Summer Training						
MPAC305	Mechanical Design	C	116	84	8	Y3-S6	—
MPAC306	Maintenance of Air Conditioning Systems	C	116	84	8	Y3-S6	—
MPAC308	Air Conditioning System Drawing	C	116	84	8	Y3-S6	MPAC101
MPAC309	Electrical and Electronic Engineering	C	88	62	6	Y3-S6	MPAC107
MPAC310	Summer Training 2	C	—	—	—	Summer	—
	YEAR 4 — ANNUAL SYSTEM (43 Credit Units)						
—	Refrigeration Systems	Specialized	2Th+2Pr	—	6	Y4	Thermo2, RAC1
—	Air Conditioning Systems	Specialized	2Th+2Pr	—	6	Y4	RAC1, Fluid
—	Renewable Energy	Specialized	2Th+1Pr	—	5	Y4	Thermo2, HT
—	Control Circuits	Specialized	2Th+1Pr	—	5	Y4	Elec. Eng.
—	Power Plants	Specialized	2Th+1Pr	—	5	Y4	Thermo 2
—	Industrial Eng. & Quality Control	Assistance	2Th	—	4	Y4	—
—	Computer Application 4	Assistance	1Th+2Pr	—	4	Y4	CompApp2
—	Project (Capstone)	Specialized	6Pr	—	4	Y4	All Y3 courses
—	English Language	Assistance	1Th	—	2	Y4	English 2
—	Engineering Ethics	Assistance	1Th	—	2	Y4	—

Type: S=Supporting, C=Core/Compulsory, B=Basic, E=Elective SSWL=Scheduled Student Work Load
USSWL=Unscheduled Student Work Load

NOTE: all details in Program description attached in the evidence below

How Curriculum Meets Specific Requirements

a) Mathematics and Physical Sciences

- Mathematics (MPAC100, 8 ECTS): Covers differential and integral calculus and mathematical methods for engineering applications.
- Advanced Mathematics (MPAC200, 6 ECTS): Extends to numerical methods, differential equations, and engineering analysis.
- Engineering and Numerical Analysis (MPAC300, 4 ECTS): Applies numerical methods to engineering problems.
- Engineering Mechanics (MPAC108, 8 ECTS): Fundamental statics and dynamics principles.

b) Industry Standards, Safety, and Global Impact

- RAC courses (MPAC205, MPAC304) include ASHRAE standards, refrigerant regulations, and environmental considerations.
- MPAC306 (Maintenance) addresses industry safety standards and maintenance codes.
- Engineering Ethics (Y4) covers professional and ethical responsibilities, public safety, and global engineering impacts.
- Renewable Energy (Y4) covers environmental impacts and sustainable engineering practices.

c) Laboratory Experiences

- Thermodynamics Lab: Thermodynamic cycles and energy conversion experiments.
- Refrigeration & HVAC Lab: Refrigeration equipment, psychrometric measurements, system performance testing.
- Heat Transfer Lab: Conduction, convection, and radiation experiments.
- Fluid Mechanics Lab: Flow measurement, pipe friction, pump performance testing.
- Maintenance Lab: HVAC maintenance and troubleshooting exercises.
- CAD Studio: HVAC system drawing and documentation.

d) Capstone / Integrating Experience

The Year 4 Capstone Project is the program's integrating experience. Students work in teams to design, analyze, or optimize a real-world refrigeration or HVAC engineering system, applying knowledge from all program areas, demonstrating technical and non-technical skills, and preparing a formal technical report and oral presentation meeting professional engineering standards.

5.2 Course Syllabi

Syllabi for all specialized courses are provided as supplementary materials, following the NCPAETE format including: course number and name, credits and contact hours, instructor name, textbook, course description, prerequisites, course type, learning goals, student outcomes addressed, and topics list.

Evidence Table 5-2: Course Syllabi

Item	Evidence / Document Name	Link
Program description for all subjects	Program description	https://shorturl.at/oqXsg

5.3 Educational Unit

The RACET program is housed within the Department of Mechanical Power Engineering Technology at Al-Salam University College. Administrative chain of responsibility:

Position	Name	Responsibility
Dean of College	Prof. Dr. Abd Al-Salam Bdawi Yousuf	Chief Executive — overall institutional authority
Vice Dean for Academic Affairs	Prof. Dr. Sabih Akram Zamal	Academic programs and quality assurance
Head of Department	Assist. Prof. Dr. Ali Yousif Al-Maliki	Direct responsibility for RACET program administration
Program Coordinator	Prof. Dr. Muhannad Zaidan Khalifa	Day-to-day program coordination and assessment

5.4 Credit Unit

The program uses the ECTS system for Years 1–3 (1 ECTS = 25 hours total student workload). For Year 4, the annual system applies credit units based on weekly contact hours. One academic year consists of at least 30 weeks of instruction for Years 1–3 (two 15-week semesters) and 30 weeks for Year 4. Final examinations are separate.

5.5 Advisory Committee

The program maintains an active Advisory Committee of representatives from industry, government, and academia, meeting at least once per academic year to: review PEOs and SOs; advise on current HVAC industry trends; evaluate curriculum relevance; provide input on graduate competencies; and support industry partnerships and internship placements.

Evidence Table 5-3: Advisory Committee

Item	Evidence / Document Name	Link
Advisory Committee charter	[Advisory Committee Terms of Reference]	https://short-url.cc/1sobH
Meeting minutes (2025-2026)	[Department Committee]	https://short-url.cc/1socl

Item	Evidence / Document Name	Link
Program improvement recommendations	[Committee Recommendations]	https://h1.nu/1sOeG

CRITERION 6. FACULTY

6.1 Faculty Qualifications

The department faculty possess qualifications adequate to cover all curricular areas. The department has 22 permanent (tenant) faculty members and 7 external (visiting) lecturers, all holding advanced degrees in relevant engineering fields, collectively covering thermodynamics, fluid mechanics, heat transfer, refrigeration and HVAC systems, mechanical design, control systems, and renewable energy.

Table 6-1a: Permanent (Tenant) Faculty Qualifications

#	Faculty Member Name	Highest Degree, Field	Rank	FT/PT	PS/TS	Activity
1	Dr. Ali Yousif Khunayab	Ph.D. Mech. Eng. – Applied Mechanics	Asst. Prof.	FT	PS	H
2	Dr. Mudhatt Alawi Nasser	Ph.D. Science – Earth Sciences	Prof.	FT	PS	H
3	Dr. Muhannad Zaidan Khalifa	Ph.D. Mech. Eng. – Applied Mechanics	Prof.	FT	PS	H
4	Dr. Saad Tami Hamidi	Ph.D. Mech. Eng. – Thermal Eng. Tech.	Asst. Prof.	FT	PS	H
5	Dr. Dhar Ali Yousif	Ph.D. Agricultural Sci. – Power Machinery	Asst. Prof.	FT	PS	M
6	Dr. Abbas Abdul Hussein	Ph.D. Mech. Eng. – Metallurgical Eng.	Lecturer	FT	PS	H
7	Dr. Waad Adnan Khalaf	Ph.D. Mech. Eng. – Applied Mechanics	Lecturer	FT	PS	H
8	Dr. Marwa Ali Hussein	Ph.D. Mech. Eng. – Applied Mechanics	Lecturer	FT	PS	H
9	Dr. Muthanna Marouh Khairy	Ph.D. Mech. Eng. – Thermal Eng.	Lecturer	FT	PS	H
10	Dr. Sura Thaer Badr	Ph.D. Mech. Eng. – Applied Mechanics	Lecturer	FT	PS	M
11	Dr. Wazir Hassan Khalaf	Ph.D. Mech. Eng. & Education	Lecturer	FT	PS	M
12	Jasim Mohammed Jaloub	M.Sc. Mech. Eng. – Power (2020)	Asst. Lecturer	FT	PS	M

#	Faculty Member Name	Highest Degree, Field	Rank	FT/PT	PS/TS	Activity
13	Alawi Hamada Alwan	M.Sc. Mech. Eng. (Power)	Lecturer	FT	PS	M
14	Abdul Sattar Mohammed Jasim	M.Sc. Metallurgical Engineering	Asst. Lecturer	FT	PS	M
15	Majid Hassan Ali	M.Sc. Mech. Eng. – Applied Mechanics (1995)	Asst. Lecturer	FT	PS	H
16	Habib Khattar Abbas	M.Sc. Mech. Eng. – Power Engineering	Asst. Lecturer	FT	PS	M
17	Sara Basim Shahab	M.Sc. Energy Eng. (2021), Ph.D. Candidate	Asst. Lecturer	FT	PS	M
18	Ayat Ahmed Munir	M.Sc. Energy Eng. (2020), Ph.D. Candidate	Asst. Lecturer	FT	PS	H
19	Tabarak Thamer Fadhil	M.Sc. Energy Eng. (2024), Ph.D. Candidate	Asst. Lecturer	FT	PS	M
20	Hussein Fadhil Ajaj	M.Sc. Electromechanical Eng.	Asst. Lecturer	FT	PS	M
21	Banan Hussam Subhi	M.Sc. Electromechanical Eng.	Asst. Lecturer	FT	PS	M
22	Zahraa Fadhil Ajaj	M.Sc. Electromechanical Eng. – Navigation	Asst. Lecturer	FT	PS	M

Table 6-1b: External (Visiting) Faculty Qualifications

#	Faculty Member Name	Highest Degree, Field	Rank	FT/PT	PS/TS	Activity
1	Dr. Osama Raad Sakhil	Ph.D. Mech. Eng. – Thermal Eng. Tech.	Asst. Prof.	PT	TS	H
2	Dr. Ali Mohammed Hussein	Ph.D. Thermal Mech. – RAC Engineering	Lecturer	PT	TS	M
3	Dr. Rafif Juma Salman	Ph.D. Mech. Eng. – Applied Mechanics	Lecturer	PT	TS	H
4	Dr. Ali Fawzi Abdul Kareem	Ph.D. Mech. Eng. – Applied Mechanics	Lecturer	PT	TS	M
5	Ali Ihsan Ali	M.Sc. Mech. Eng. – Thermal Power	Asst. Lecturer	PT	TS	M

#	Faculty Member Name	Highest Degree, Field	Rank	FT/PT	PS/TS	Activity
6	Sahira Ahmed Mahmoud	M.A. English Language	Asst. Lecturer	PT	TS	M
7	Fouad Rafea Armoosh	M.A. English Language	Asst. Lecturer	PT	TS	M

Codes: PS=Permanent Staff, TS=Temporary Staff, FT=Full Time, PT=Part Time, H=High, M=Medium

6.2 Faculty Workload

According to Faculty Member Work Structure Instructions No. (72) of 1993, issued pursuant to the Iraqi University Service Law, the minimum weekly teaching load for faculty members at Iraqi universities affiliated with the Ministry of Higher Education and Scientific Research is as follows: Professor: 8 hours per week; Assistant Professor: 10 hours per week; Lecturer: 12 hours per week; and Assistant Lecturer: 14 hours per week. The teaching load is reduced by two hours per week for faculty members over the age of 50. The table below presents the teaching load for subject-specific courses only.

Faculty Member	FT/PT	Classes Taught (Course / Credit Hrs.)	Teaching %	Research %	Other %
Dr. Saad Tami Hamidi	FT	Thermodynamics 1 (Y1-S2) / Thermodynamics 2 (Y2-S3)	60%	30%	10%
Tabarak Thamer Fadhil	FT	Thermodynamics 1 & 2 (support teaching)	70%	20%	10%
Ayat Ahmed Munir	FT	Fluid Mechanics (Y2-S3)	65%	25%	10%
Dr. Osama Raad Sakhil	PT	RAC 1 (Y2-S4) / RAC 2 (Y3-S5)	70%	20%	10%
Dr. Muthanna Marouh Khairy	FT	Heat Transfer (Y3-S5)	60%	30%	10%
Jasim Mohammed Jaloub	FT	Maintenance of AC Systems (Y3-S6)	70%	20%	10%
Majid Hassan Ali	FT	AC System Drawing (Y3-S6)	65%	20%	15%
Dr. Ali Mohammed Hussein	PT	Air Conditioning Systems / Refrigeration Systems (Y4)	65%	25%	10%
Dr. Rafif Juma Salman	PT	Control Circuits (Y4)	65%	25%	10%
Sara Basim Shahab	FT	Renewable Energy (Y4)	65%	25%	10%

6.3 Faculty Size

The program maintains a faculty-to-student ratio complying with the NCPAETE 1:20 requirement. With 22 permanent faculty members and 7 external lecturers (29 total), and department-wide enrollment

averaging approximately 1,500 students, the department maintains adequate faculty coverage. Faculty engage students through office hours, academic advising, laboratory supervision, and project supervision.

6.4 Professional Development

- Research Support: Faculty publish in peer-reviewed journals and present at international conferences.
- Conference Participation: Faculty attend national and international engineering conferences.
- Training and Workshops: Faculty participate in software training (ANSYS, MATLAB) and pedagogical development workshops.
- Postgraduate Studies: Several faculty members are completing doctoral degrees (Ph.D. candidates).
- Professional Memberships: Faculty hold active memberships in the Iraqi Engineers Union and other professional organizations.

6.5 Authority and Responsibility of Faculty

- Course Creation and Modification: Faculty propose, develop, and revise courses through the Department Council, which reviews and approves all changes.
- Student Outcome Definition: Faculty collectively define and revise SOs through the assessment committee, with stakeholder input and Department Head approval.
- Assessment and Continuous Improvement: Faculty implement course-level assessments, collect and analyze data, and participate in program-level evaluation and improvement.
- PEO Review: Faculty contribute to annual PEO reviews, providing assessment data and professional judgment.

Evidence Table 6-3: Faculty Documentation

Item	Evidence / Document Name	Link
Faculty CVs — specialized course instructors	Curricula_Vitae_of_Faculty_Members.docx	https://short-url.cc/1xSqo
Faculty member list and specializations	Faculty_Members_of_the_Department.docx	https://short-url.cc/1xSqG
Specialized subjects assignment	Specialized_Study_Topics.docx	https://short-url.cc/1xSr2
Faculty workload records	[Faculty Workload Documentation]	https://short-url.cc/1xSuY

CRITERION 7. FACILITIES

7.1 Offices, Classrooms, and Laboratories

Offices

- Department Head Office: Dedicated office with computer, printer, and communication facilities.
- Department Coordinator's Office: contains laptop and all students records for the department.
- Faculty Offices: Individual or shared offices for full-time faculty with computers and internet access.
- Administrative Staff Office: Clerical office with student record management systems.
- Examination Committee Room: Secure room for examination storage and committee operations.

Classrooms

The program has access to a minimum of 5 smart classrooms (NCPAETE requirement for BS programs). Each classroom provides minimum 1.5 m² per student and is equipped as a smart classroom with integrated screen, projection, photography, recording, broadcasting, and internet systems for recording electronic lectures. Classrooms have appropriate lighting, ventilation, and learning-conducive seating.

Laboratories

Program laboratories comply with Iraqi Standards for Laboratory Quality (2nd Edition), providing minimum 4 m² per student:

Laboratory Name	Major Equipment	Courses Supported
Thermodynamics Laboratory	Boilers, steam generators, thermodynamic cycle test rigs, pressure and temperature measurement systems	Thermodynamics 1 & 2
Refrigeration & HVAC Laboratory	Refrigeration test units, split AC systems, refrigerant recovery equipment, psychrometers, P-h analyzers, HVAC training units	RAC 1, RAC 2, AC Maintenance, Refrigeration Systems, AC Systems (Y4)
Heat Transfer Laboratory	Conduction apparatus, convection setups, radiation measurement, heat exchangers, thermal conductivity testers	Heat Transfer (MPAC303)
Fluid Mechanics Laboratory	Flow measurement devices, pipe friction apparatus, pumps and fans, manometers, flow visualization equipment	Fluid Mechanics (MPAC202)
Engineering Drawing / CAD Studio	CAD workstations with HVAC design software, drafting equipment, printers/plotters	Engineering Drawing, AC System Drawing
Computer Laboratory	Workstations with MATLAB, AutoCAD, ANSYS, energy simulation software, internet access	Computer Applications 1, 2 & 4, MATLAB

Laboratory Name	Major Equipment	Courses Supported
Workshops (MPAC102)	Machine tools, welding equipment, fitting tools, precision measurement instruments	Workshops
Renewable Energy Laboratory	Solar PV and thermal panels, wind energy equipment, energy storage systems, measurement instruments	Renewable Energy (Y4)

7.2 Computing Resources

- Computer Laboratory: Workstations with MATLAB, AutoCAD, ANSYS, and HVAC design software.
- Internet Access: High-speed internet throughout campus — classrooms, labs, and faculty offices.
- Online Resources: Access to online databases, digital libraries, and academic journals.
- Accessibility: Computing facilities available during college hours with extended access for project work.

7.3 Guidance

- Laboratory Safety Orientation: Mandatory safety orientation before laboratory access.
- Equipment Training: Qualified technicians provide instruction on all major equipment.
- Safety Procedures: Written safety procedures posted in all laboratories.
- Supervision: All laboratory sessions supervised by qualified faculty or technicians.
- Software Training: Engineering software instruction through dedicated computer application courses.

7.4 Maintenance and Upgrading of Facilities

- Routine Maintenance: Scheduled routine maintenance by qualified technical staff.
- Preventive Maintenance Program: Documented preventive maintenance schedule for all major equipment.
- Equipment Upgrading: College budget includes provisions for equipment upgrading and replacement.
- Computing Updates: Software licenses maintained annually; hardware replaced on scheduled cycle.

7.5 Library Services

- Technical Collection: Textbooks, reference materials, engineering journals, and technical publications in mechanical engineering, thermal engineering, refrigeration, and HVAC.
- Digital Resources: Access to online databases, digital libraries, and standards organizations.
- Book Ordering: Faculty may request acquisitions through the formal library request process.

- Electronic Information: Library catalog and online portal for efficient resource location and access.

7.6 Overall Comments on Facilities

The facilities at Al-Salam University College provide an adequate learning environment for RACET students to achieve program Student Outcomes. The college ensures all facilities, tools, and equipment are safe through mandatory safety training, regular maintenance, and compliance with Iraqi building and safety standards. The program regularly reviews and upgrades equipment to maintain currency with industry practices.

Evidence Table 7-1: Facilities Documentation

Item	Evidence / Document Name	Link
Laboratory equipment inventory	Laboratory Pictures [Laboratory Equipment List]	https://short-url.cc/1sTDZ https://short-url.cc/1yoS8
Classroom specifications	Infrastructure picture of the college	https://short-url.cc/1sokL https://short-url.cc/1somB https://short-url.cc/1xSyH https://short-url.cc/1sTDZ
Maintenance	[Facility Maintenance Committee	https://h1.nu/1yjiD
Library	[Library pictures]	https://short-url.cc/1xSwo
Computing resources inventory	[Computing Resources Inventory]	https://short-url.cc/1xSA8
Laboratory safety manual	[Laboratory Safety Manual]	https://short-url.cc/1soo1

ALSALAM UNIVERSITY COLLEGE

CRITERION 8. INSTITUTIONAL SUPPORT

8.1 Leadership

- Department Head: Chairs the Department Council, oversees curriculum management, coordinates faculty activities, and is responsible for program quality and accreditation compliance.
- College Dean: Provides institutional leadership, ensures adequate resource allocation, and approves major academic decisions.
- Vice Dean for Academic Affairs: Coordinates academic planning, quality assurance, and student affairs.
- Institutional Academic Council: Reviews and approves significant curriculum changes, new programs, and major policy decisions.

8.2 Program Budget and Financial Support

Budget Process

1. Department Head prepares the annual budget request based on program needs and planned improvements.
2. Budget reviewed and approved by the College Dean and Financial Administration.
3. Funds allocated for personnel, equipment, maintenance, library resources, and operations.
4. Mid-year budget reviews allow adjustments based on actual needs.

Teaching and Infrastructure Support

- At least one qualified laboratory technician per laboratory.
- Assistant Lecturers support laboratory sessions and provide additional student support.
- Smart classrooms, recording equipment, and online platforms for instructional delivery.
- Dedicated budget allocations for maintaining and upgrading infrastructure.

8.3 Staffing

Staff Category	Head Count (FT)	Head Count (PT)	FTE
Administrative	2	—	2
Faculty (Permanent)	22	—	22 (ratio 1:20)
Faculty (External/Visiting)	—	7	Part-time equivalent
Technicians / Specialists	Min. 1 per lab	—	Per NCPAETE requirement
Office / Clerical	2	—	2

8.4 Faculty Hiring and Retention

Faculty Hiring Process

5. Department Head identifies vacancies based on curricular needs.
1. Position announced through Ministry of Higher Education channels.
2. Applications reviewed by faculty selection committee against minimum qualifications.
3. Candidates evaluated on qualifications, research record, teaching experience, and professional expertise.
4. Final appointment requires approval from Department Head, College Dean, and university administration per Ministry regulations.

Faculty Retention Strategies

- Competitive compensation aligned with Ministry salary scales.
- Research support including laboratory access, travel funding, and publication support.
- Professional development opportunities for conference attendance and workshop participation.
- Clear academic promotion pathways aligned with Ministry criteria.

8.5 Support of Faculty Professional Development

- Research Funding: Institutional support for faculty research projects and publication costs.
- Conference Support: Financial support for presenting research at national and international conferences.
- Training Programs: Support for specialized training in software, pedagogy, and engineering practice.
- Postgraduate Support: Support for faculty pursuing doctoral degrees.

8.6 Academic Support Units

Unit / Department	Individual Responsible	Courses Supported
Mathematics Unit	Al-Salam University College Academic Staff	Mathematics, Advanced Mathematics, Engineering Analysis
Physics / Engineering Sciences	Al-Salam University College Academic Staff	Engineering Mechanics, Materials Science
English Language Unit	Al-Salam University College Academic Staff	English 1 & 2, English (Year 4)
Arabic Language Unit	Al-Salam University College Academic Staff	Arabic 1 & 2
Computer Science Unit	Al-Salam University College Academic Staff	Computer Principles, Computer Applications 1, 2 & 4

Unit / Department	Individual Responsible	Courses Supported
Human Sciences Unit	Al-Salam University College Academic Staff	Human Rights and Democracy, Engineering Ethics

Evidence Table 8-1: Institutional Support Documentation

Item	Evidence / Document Name	Link
Organizational chart	[Department & College Organizational Chart]	https://short-url.cc/1soqE https://short-url.cc/1xSEM
Financial bylaws	Financial bylaws and expenditures	https://short-url.cc/1xSGb
Faculty hiring policy	[Faculty Recruitment Policy]	https://short-url.cc/1sou4
Staff development records	[Professional Development Log]	https://short-url.cc/1soyZ
Laboratory technician assignments	Laboratory sessions are supervised by qualified faculty members and assistant lecturers who are responsible for equipment operation, maintenance guidance, and student safety	-----



8.7 Non-Academic Support Units

The following individuals are responsible for non-academic support units that provide services to the RACET program:

PROGRAM CRITERIA

1. Curriculum Program Criteria

The BS RACET curriculum provides both breadth and depth across the range of engineering and science-specialized topics consistent with the PEOs and SOs:

Level	Course	Specialized Content	Year
Foundation	Thermodynamics 1 & 2	Thermodynamic principles, cycles, refrigeration fundamentals	Year 1–2
Foundation	Fluid Mechanics	Fluid behavior in HVAC piping and duct systems	Year 2
Foundation	Heat Transfer	Conduction, convection, radiation in HVAC systems	Year 3
Core Specialization	RAC 1 (MPAC205)	Vapor compression cycles, refrigerants, system components	Year 2
Core Specialization	RAC 2 (MPAC304)	Advanced HVAC design, load calculations, system selection	Year 3
Advanced Application	AC Maintenance (MPAC306)	Preventive/corrective maintenance, troubleshooting	Year 3
Advanced Application	AC Drawing (MPAC308)	HVAC engineering drawings, CAD for HVAC systems	Year 3
Integration	Refrigeration Systems (Y4)	Industrial refrigeration, low-temperature systems	Year 4
Integration	Air Conditioning Systems (Y4)	Complete HVAC system design and optimization	Year 4
Integration	Control Circuits (Y4)	HVAC automation and building control systems	Year 4
Integration	Renewable Energy (Y4)	Solar cooling, sustainable HVAC systems	Year 4
Capstone	Senior Project (Y4)	Independent design/analysis of HVAC engineering system	Year 4

2. Faculty Program Criteria

The program meets all NCPAETE faculty program criteria:

Requirement	NCPAETE Standard	Program Status
Total permanent faculty (minimum)	10	22 permanent faculty ✓
Ph.D. holders (minimum)	7 Ph.D.	12 Ph.D. holders ✓
M.Sc. holders (minimum)	3 M.Sc.	10 M.Sc. holders ✓
Minimum academic rank	Assistant Professor	Multiple Asst. Professors and above ✓
Specialization relevance	Program specialization	Mechanical/Thermal/Energy Engineering ✓
Specialized external faculty	Available for specialized courses	7 external faculty (RAC specialists) ✓
Department Head qualification	At least Assistant Professor rank	Assist. Prof. Dr. Ali Yousif Al-Maliki ✓

All faculty teaching specialized refrigeration and air conditioning courses are qualified by education, experience, and/or professional registration. Curriculum Vitae for all faculty responsible for specialized subjects are provided as supplementary materials.

Evidence Table PC-1: Program Criteria Compliance

Item	Evidence / Document Name	Link
Faculty CVs — specialized subject instructors	Curricula_Vitae_of_Faculty_Members.docx	https://short-url.cc/1xSN3
Complete faculty list with qualifications	Faculty_Members_of_the_Department.docx	https://short-url.cc/1xSN3 https://short-url.cc/1soAo
Department Head appointment documentation	[Department Head Appointment Order]	https://h1.nu/1sOh0
Curriculum breadth and depth mapping	Specialized_Study_Topics.docx	https://short-url.cc/1xSNq
Block diagrams — all lessons	Block_Diagrams_of_All_Lessons.docx	https://short-url.cc/1xSNV

"Accomplished with God's Blessing"