Aircraft Maintenance Engineer (AME / B1 / B2) - Aerospace / Aeronautical Engineer (degree-based) - Technician → Licensed Engineer (apprenticeship path)

2) Route A — Apprenticeship / Airline-sponsored maintenance pathway (the "hands-on" route)

What does this route look like?

An apprenticeship-style pathway typically combines classroom learning + practical workshop training + supervised on-the-job training (OJT) before you become fully qualified for independent work.
Employer programmes in the region often connect training to **approved/recognised licensing frameworks** (e.g., Part-66-type licensing for maintenance roles).

3) Route B — Degree route (the "university" route)

UAE (example: Aeronautical/Aerospace Engineering degree)

Khalifa University offers a **BSc in Aerospace Engineering**

Pathway	Who it suits	What you do first	Typical training setting	What you work toward
Apprenticeship / employer programme	People who want hands-on maintenance work early	Apply to an airline/MRO programme or approved training	Airline training college + workshops + OJT	Aircraft Maintenance role program frameworks (qatarairways.com)
University degree (aerospace/mechanical)	People who want broader engineering foundations	Apply to an engineering college	University labs/courses	Graduate engineer roles; licensing depends on authority/training rules (Khalifa University)

Becoming an Aviation Engineer in the Middle East

Degree and Apprenticeship Routes

Aviation engineering is a regulated profession. This means you cannot simply “study engineering” and work on aircraft — you must follow approved training routes set by national aviation authorities.

In the Middle East, there are **two main pathways** into aviation engineering:

1. **Apprenticeship / Airline training route** (hands-on)
2. **University degree route** (theory-focused)

Both routes are valid, but they lead to **different roles**.

What does “aviation engineering” usually mean?

In airline and airport environments, *aviation engineering* most often refers to **aircraft maintenance engineering** — the people who inspect, repair, and certify aircraft as safe to fly.

This is different from:

- aircraft **design engineers**
- research engineers
- space or experimental engineering roles

Those roles usually come from university degrees, while maintenance roles follow licensed training pathways.

Who regulates aviation engineering in the Middle East?

Each country has a **national civil aviation authority** that controls:

- training standards
- licensing rules
- approved training organisations

Examples include:

- Saudi Arabia: GACA
- United Arab Emirates: GCAA
- Qatar: QCAA
- Jordan:CARC
- Oman: CAA

These authorities follow international aviation principles (based on ICAO standards), but **rules are applied nationally**, not centrally across the region.

Route 1: Apprenticeship / Airline Training Route

(Hands-on, practical pathway)

This route is best for students who:

- enjoy practical, technical work
- want to work on real aircraft early
- prefer structured employer training

How this route works (simple steps)

1. **Apply to an airline or approved training provider**
    - Examples: airline engineering academies or maintenance organisations

2. **Selection process**
    - Include:
        - basic maths/physics checks
        - interviews
        - aptitude or technical assessments

"Selection rules depend on the employer"

3. **Training phase**
    - Combination of:
        - classroom study
        - workshop practice
        - supervised work on aircraft

During this time, you **cannot certify aircraft**

4. **On-the-job training (OJT)**
    - You work under supervision in real maintenance environments

5. **Licensing**
    - After training + experience, you may apply for a **maintenance licence**
    - The licence is issued by the national aviation authority

Important: Being in training does **not** mean you are licensed yet.

Examples in the Middle East

Saudi Arabia

- Maintenance training and licensing are regulated under GACAR Part 66
- Approved maintenance schools are regulated under GACAR Part 147
- Airlines such as Saudia Technic run multi-year technician trainee programmes

United Arab Emirates

- Maintenance licensing follows CAR-66
- Emirates Engineering runs a National Apprenticeship Programme
- Training is approved by the UAE aviation authority

Qatar

- Qatar follows a QCAR Part-66-based licence system
- Qatar Airways runs an Aircraft Maintenance Engineering Programme
- Training includes study + on-the-job training

Age limits, nationality rules, and entry requirements **depend on the employer**.

Route 2: University Degree Route

(Academic, theory-focused pathway)

This route is best for students who:

- enjoy maths, physics, and theory
- want broader engineering knowledge
- aim for design, analysis, or technical management roles

How this route works

1. **Study a university degree**
    - Aerospace Engineering
    - Aeronautical Engineering
    - Mechanical Engineering (with aviation focus)
2. **Graduate as an engineer**
    - This does **not automatically** give you a maintenance licence
3. **Next steps depend on your goal**
    - Some graduates move into:
        - engineering offices
        - planning and analysis roles
        - technical management
    - Others may still need **additional approved training** if they want to certify aircraft

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Examples of degree providers

- **UAE**: Aerospace/Aeronautical Engineering degree programmes (e.g. Khalifa University)
- **Jordan**: Aircraft Maintenance /Aeronautical/Avionics Engineering degrees(e.g. Amman arab university)
  Saudi Arabia: Aeronautical/mechanical Engineering departments (e.g. KFUPM)
- **Qatar**: Mechanical/Aerospace-related engineering programmes.

Degree vs Apprenticeship

Pathway	Focus	Training Style	Typical Outcome
Apprenticeship	Aircraft maintenance	Practical + supervised work	Maintenance engineer pathway
Degree	Engineering theory	University study	Graduate engineer roles

Neither route is “better” — they lead to **different careers**.

How long does training take?

There is **no fixed timeline**.

- Apprenticeship routes often take **2-4 years**
- University degrees usually take **3–4 years**
- Full certification depends on:
  - training type
  - experience
  - authority requirements
  - individual progress

Anyone promising a “fast” licence should be questioned.

Students should always check official bodies, such as:

- National civil aviation authorities (GACA, GCAA, QCAA)
- Airline engineering career pages
- Approved maintenance training organisations
- ICAO (for international standards)

https://www.etihadengineering.com/training/

https://saudiatechnic.com/training

https://www.emiratesgroupcareers.com/engineering-apprenticeship/

https://careers.qatarairways.com/global/en/engineering

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