

# Abed Alfattah Shaban

Mechanical Engineer

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## PROFESSIONAL SUMMARY

Mechanical Engineering student at The University of Jordan (graduating 2027) with 5+ years of hands-on CNC and 3D printing experience, having produced 100+ manufactured pieces. Proven ability to lead and independently design, prototype, and build complete systems — from oilfield equipment to precision measurement devices. Also gained ongoing exposure to construction contracting and government regulatory processes (Greater Amman Municipality, Lands Department, utilities, Civil Defense) alongside studies. Pursuing PMP certification toward an engineering management track.

## CORE SKILLS

- CAD & Design: SolidWorks, Creo, AutoCAD (piping & layout drawings)
- Simulation & Analysis: FEA & CFD (Creo, ANSYS), MATLAB
- Manufacturing: CNC Machining, 3D Printing (Cura), Laser Engraving (LightBurn), Welding & Metal Fabrication
- Renewable Energy & HVAC Software: PVsyst, Polysun (Solar Design), HAP (HVAC / Air Cooling Load Calculations)
- Mechatronics & Programming: Arduino (design, coding, and troubleshooting), PCB Design, Web & Embedded Systems Coding
- Business & Process Tools: Microsoft Excel, SAP (learning)
- Languages: Arabic (Native), English (Good)

## PROJECTS

### Vibration Analysis of Airless vs. Conventional Tires — *Graduation Project*

- Led the project team for one year, comparing vibration behavior of airless vs. conventional tires.

### Oilfield Extraction Pump Design

- Designed a mechanical pump system for crude oil extraction, using CFD and FEA analysis to validate flow performance and structural integrity.

### Underfloor & Central Heating System Design

- Designed underfloor and central heating layouts for residential applications.

### All-Terrain Utility Vehicle Design — *Rugged-Terrain / Debris Mobility*

- Engineered a vehicle concept designed for stable mobility over rubble and debris-covered terrain.

### 3-Axis Gyroscopic Watch Winder

- Designed, modeled, and 3D-printed a functional 3-axis gyroscopic mechanism from concept to finished product.

### Solar Energy Systems — *Tracking System & System Design*

- Built a 3-axis solar tracker (~10% net energy gain); third axis mainly targeted wind-load stability. Also designed solar systems via PVsyst and Polysun.

### Hexapod (6-Legged) Robot

- Designed, 3D-printed, and programmed a fully functional six-legged walking robot using Arduino.

### Acoustic Absorption Coefficient Measurement Device

- Built a device to measure the sound absorption/insulation coefficient of unlisted or unfamiliar materials.

### Recycled-Plastic Eyewear Line — *Sustainable Product Design & Sales*

- Designed and 3D-printed eyewear frames from recycled plastic (3 bottles per pair); sold products to students online.

## PRACTICAL EXPERIENCE

- Internship — Mechanical Systems, Solar Energy & HVAC: contributed to multiple execution and design projects, alongside troubleshooting and fault diagnosis.
- Internship — Khaled Shaban Contracting Co. (3 months, official/documented): on-site construction and project exposure.
- Hands-on fabrication: pipe/duct installation and inspection, welding, and workshop machinery operation.
- Self-taught and applied: CNC operation, 3D printing (including a self-built 3D printer), laser engraving, and PCB design.
- Built 3 websites, including one to help incoming university students settle in.
- Currently developing a simplified RAG (Red-Amber-Green) status reporting tool for local companies, in partnership with a contracting company, to replace paper- and email-based issue tracking.

## GOVERNMENT & ADMINISTRATIVE EXPERIENCE

### Khaled Shaban Contracting Co. — Amman, Jordan (informal, ongoing alongside studies, 6+ years)

- Practical exposure to permitting and regulatory processes with the Greater Amman Municipality, Department of Lands and Survey, Civil Defense, and utility providers (Miyahuna, JEPCO).
- Built a working network of contacts across government departments and local contractors.

## EDUCATION

### The University of Jordan — B.Sc. Mechanical Engineering (Expected 2027)

## CERTIFICATIONS

- PMP and NEBOSH / ISO 45001 (Occupational Safety) — In Progress