MUHAMMAD TAYYAB KHALIL

Mechanical Engineer

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PROFILE

Performance driven engineering professional with an extensive experience as Site Mechanical Engineer in national and international level projects. Possesses expertise in site supervision that concerns concerning with Fire Fighting, Industrial Structures, HVAC etc.

WORK EXPERIENCE

- **Site Engineer, China State Construction Engineering Corporation**
  Project: New Islamabad International Airport
  November 28, 2015 – December 29, 2017

  - Installation of **Wet Sprinkler System** in Passenger Terminal Building and **Dry Sprinkler System** in Air Traffic Control Building that involved pendent sprinklers, OS&Y gate valves, globe valves, check valves, Centrifugal Pumps, Pipework etc.
  - Installation of **Fire Suppression System** in Air Traffic Control Building to keep electrical and computer systems safe in case of fire.
  - Installation of **Seismic Bracing** that can withstand sheer stress of 10,000 psi in order to keep pipework stationary during earthquakes.
  - Installation of **Air Handling Units** while closely inspecting its Air Filters, Check Valve, Thermal Expansion Valve, Full Load Amperage etc.
  - Installation of **Centrifugal Pumps** that involved check valve, butterfly valves, rubber expansion joint assembly etc.
  - Installation of **Air Terminals** such as various types of Grills, Diffusers and Ducts which are necessary in **Variable Air Volume (VAV)** zoning.

- **Site Engineer, Frontier Works Organization**
  May 4, 2015 – November 18, 2015

  - Site supervision and ensuring safety during the practical application of **NATM Methodology** by means of Jumbo Drill Machine and Shotcrete Machine.
  - Overhauling of **Jumbo Drill Machine** and **Shotcrete Machine** after every 2000 working hours and 1600 working hours, respectively.
  - **Compressive Strength Test** of concrete to make sure that the concrete being utilized for shotcrete has a compressive strength of at least 400 kg/cm^2.
  - Surveying **SMAW Welding** manufacturing of Lattice Girders which are a necessary component of NATM Methodology.
  - Weekly maintenance of **Concrete Batching Plant** and close attention to the distribution of sand, cement, coarse and fine aggregate.

- **Trainee Engineer, National Scientific Engineering & Trading Services, Ltd.**
  September 8, 2014 – March 2, 2015

  - Fabrication of various mechanical parts of autoloader equipment of **Al-Khalid Tank** such as Magazine Assembly, Transfer Unit Assembly and Magazine Drive Unit.

- **Internship, National Development Complex**
  March 9, 2015 – May 8, 2015

  - Theoretical Designing of **Geothermal Heating System** with the aid of Centrifugal Pump, Centrifugal Blower, Heat Exchanger and CPVC Pipes.
  - Locating the particular places in Pakistan where several hot springs are present such as **Mangophir**, **Murtazabad**, **Tatta Pani** and **Chaghai District** where a geothermal system can be set up.
  - Selection of **CPVC Pipe** instead of PVC and PEX Pipes on the basis of warm temperature conditions and general understanding of **Scheduling** in Pipework.
  - Cautiously selection of **Centrifugal Pump** and **Counter Flow Double Pipe Heat Exchanger** on the basis of the particular aspects of the project.

- **Internship, Fauji Fertilizer Company, Ltd.**
  July 16, 2012 – August 25, 2012

  - General understanding of the manufacturing process of **Urea** (CH_4N_20) fertilizer on an industrial scale.
  - Mechanism of **Centrifugal Pump** and considering the importance of types of impellers, Bernoulli's Principle in volute casing, necessary **Priming** and how to avoid **Cavitation**.
  - Mechanism of **Positive Displacement Pump** while learning the function of **Reciprocating Piston Pump** and the importance of **Check Valves** in them
  - Comprehending the basic difference between gas and steam in order to learn the working principles and comparison of **Gas Turbine** and **Steam Turbine**.
  - Difference between **Gas Welding** and **Arc Welding**. Processes of various types of Arc Welding such as **MIG**, **TIG** and **SMAW Welding** and learning which one of them should be used in particular conditions.
  - Understanding various types of **Welding Flames** and the reasons behind their usage with respect to base metals and working environment.

ACADEMIC QUALIFICATIONS

- **HITEC University, Taxila**
  BS Mechanical Engineering (2010 - 2014) CGPA 2.75/4

- **FFC Grammar School**
  FSc Pre-Engineering (2008 – 2010) Percentage: 73% Grade: A

- **FFC Grammar School**
  Matriculation (2006 – 2008) Percentage: 81% Grade: A+

FINAL YEAR PROJECT

Design, Analysis and Fabrication of Small Unmanned Air Vehicle

Utilizing the principles of mechanical engineering and aerodynamics, the Final Year Project focusses on mathematical designing, CFD analysis and practical fabrication of small unmanned air vehicle for surveillance purposes.

SEMESTER PROJECTS

- Garage Security System (Instrumentations & Measurements)
- Miniature Shaper Machine (Design of Machine Elements)
- Pressing Device (Theory of Machines)
- Watch Tower (AutoCAD)
- Iron Man Helmet (Pro-E)

SOFTWARE EXPERTISE

- AutoCAD
- Pro-Engineer
- Visual Basic C++
- MatLab
- Primavera
- HAP

SEMINARS & WORKSHOPS

- One day seminar on **Entrepreneurship & Basic Supervision of Construction Projects** arranged by Pakistan Engineering Council on March 15, 2016.
- One day seminar on **Engineering Projects & Supply Chain Management** arranged by Pakistan Engineering Council on March 29, 2017.
- Two-week training of **Primavera Professional P-6 (R-15.2) & MS** Project arranged by Skill Development Council from April 21, 2016 to May 7, 2016.

PERSONAL INFORMATION

- **Date of Birth:** January 7, 1992
- **Nationality:** Pakistani
- **Marital Status:** Single
- **Passport Number:** WN4104443 (Validity up to July 3, 2022)