Alfred Muñoz

Weight Control Engineer | Weight & CG Reporting | Project Coordination | Technical Writing

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PROFESSIONAL SUMMARY

Mechanical Engineer (M.S.) with 15+ years of offshore and marine engineering experience, specializing in weight control and weight & CG reporting for offshore platforms, drilling modules, drilling units, and jack-up rigs across FEED, greenfield, brownfield, fabrication, and dry-dock phases. Develops weight control procedures, weight budgets, allowances, and contingencies in line with ISO 19901-5, client specifications, and SAWE recommended practices, and produces monthly weight reports, including for ADNOC Offshore. Experienced project coordinator who led a multicultural, multidisciplinary team of eight to produce reports and charts that supported faster, more accurate decisions, and who manages Master Equipment Lists, vendor documentation, change management, and status reporting. Proven technical writer of procedures, RFQs, specifications, TIRs, and test and certification reports; classroom teaching adds clear communication with varied audiences.

Work authorization: U.S. citizen; no sponsorship required. Open to remote, Houston hybrid/onsite, and 25–30% travel.

CORE SKILLS

Weight Control & Mass Properties: Weight Control Engineering; Weight & CG (Center of Gravity); Mass Properties; Weight Estimates & Weight Budgets; Monthly Weight Reports; Weight Cases & Load Conditions; Allowance & Contingency by Project Phase; Weight Trending & Reduction; Dry-Dock vs. Floating Condition Reconciliation; Inclining Experiments; Deadweight Surveys; Weight Certifications; ISO 19901-5; SAWE Recommended Practices

Project Coordination & Controls: Project Coordination; Multidisciplinary Team Coordination; Change Control / Change Management; Document Control & Vendor Document Review; Master Equipment List (MEL); Status & Progress Reporting; Supplier Coordination; Adverse Trend Identification; FEED, Greenfield & Brownfield Projects; ISO Processes

Technical Writing & Review: Weight Control & Pre-Commissioning Procedures; RFQs; Purchase Specifications; Technical Information Requests (TIRs); Test, Certification & Weight Reports; Testing & Commissioning Memos; Technical Review of Specifications, Data Sheets & Vendor Documentation

Engineering: Mechanical Package Engineering; Naval Architecture; Commissioning & Pre-Commissioning; Pump Sizing; Lifting Pad Eye Registry; Form, Fit & Function Review

Software: Microsoft Office (Word, Excel, PowerPoint); AutoCAD; SolidWorks; 3D CAD Data Extraction; MATLAB; MathCAD; Pro/ENGINEER 2000; I-DEAS; Visual Nastran; SQL (basic); Python (basic)

PROFESSIONAL EXPERIENCE

Weight Control Engineer | Worley, Houston, TX **2022 – 2025**

- Delivered weight control for brownfield, greenfield, and FEED-phase offshore projects, ensuring an accurate weight prediction, reporting, and management process.
- Prepared and updated monthly weight reports for ADNOC Offshore, covering weight cases and load conditions for multiple offshore platforms.
- Developed a weight control procedure aligned with the ISO 19901-5 weight control standard and determined the required weight allowance and contingency for each project phase.
- Extracted weight data from 3D CAD models and identified gaps and overlaps to keep the weight database complete and consistent.
- Collaborated with multiple engineering disciplines to gather, validate, and report weight data.

Mechanical Engineer (Contract) | William Jacob Management, Houston, TX / Nova Scotia, Canada **2017**

- Processed change management solutions for the Systems Engineering Group on a Canadian Navy patrol vessel program, maintaining compliance with Navy and regulatory rules.
- Authored Technical Information Requests (TIRs) to support production and developed the product scope for more complex TIR solutions.
- Used the patrol vessel 3D model and installation and fabrication drawings to clearly communicate change management solutions.
- Reported TIR performance, status, and progress regularly, following corporate and client (Canadian Navy) processes and procedures.

Mechanical Engineer (Onshore Platform) | Load Master, Houston, TX **2015 – 2016**

- Wrote pre-commissioning procedures from vendor manuals for onshore oil and gas production and drilling equipment to verify operability before transport from the yard.
- Assisted with commissioning of various production equipment.

- Created a lifting pad eye registry enabling proper selection of slings and spreader bars during transport, ensuring lift integrity.

Mechanical Engineer | KCAD/RDS, Houston, TX **2013 – 2014**

- Performed mechanical package engineering, reviewing equipment documentation, specifications, and data sheets to confirm client and regulatory requirements were met.
- Wrote RFQs for a Christmas tree HPU and a mud tank washing skid for a drillship.
- Helped validate the Master Equipment List (MEL) for mechanical drilling equipment and updated it as equipment information became available.
- Reviewed vendor mechanical documentation for design compatibility and helped answer client technical and regulatory queries.

Mechanical Engineer & Weight Control | KCAD, Houston, TX / Newfoundland, Canada **2011 – 2013**

Hebron Project – Offshore Drilling Modules

- Worked with all engineering disciplines to quantify weight issues and escalate them to management; assisted with verifying weight allowances during the design phase.
- Identified adverse weight trends and worked with equipment vendors and discipline leads to find weight reductions, reinforcing the need to stay within weight limits.
- Performed mechanical package engineering for the DES drilling module air receiver and forklift.
- Maintained the Drilling Master Equipment List with monthly updates and reported equipment delivery status and delay issues to the client.
- Coordinated with suppliers and the design team so equipment packages met all requirements, including form, fit, and function in designated rig areas; reviewed vendor documentation and circulated it for comment.

Weight Control Engineer | SBMA, Houston, TX **2006 – 2011**

- Helped develop weight control plans, procedures, weight budgets, and monthly weight control reports for an offshore drilling unit replacement for a spar buoy.
- Developed the weight budget and first weight control report for a new project development.
- Helped develop the fabrication weight control procedure and verify allowances and construction contingency during fabrication.
- Worked onsite at an Abu Dhabi shipyard for two weeks (2008) to reconcile the difference between the dry-dock weight condition and the weight report.
- Assisted with the exit-dry-dock condition weight estimate at the Abu Dhabi shipyard (2009), which showed very favorable agreement with the actual floating condition.
- Applied ISO standards, client specifications, and SAWE recommended practices on both projects, working with all disciplines to understand why weight changes occurred.

Shipyard Engineer | Keppel AmFELS, Brownsville, TX **2003 – 2006**

- Calculated weight and center of gravity from 2D drawings and performed inertia and force calculations for jack-up drilling unit cantilever beams to certify for the inclining experiment.
- Wrote inclining test reports, weight certifications, deadweight surveys, and weight control reports for jack-up drilling rigs.
- Wrote purchase specifications for pumps, specialty valves, and strainers, plus testing and commissioning memos for pumps and valves; sized pumps and simple supply air systems.

INSTRUCTION & TEACHING EXPERIENCE

Long-Term Substitute Teacher, English Language Arts | Katy ISD, Katy, TX **2026 – Present**

- Deliver English Language Arts instruction in a long-term assignment with clear, reliable communication.

Substitute Teacher & Long-Term Math Tutor | Katy ISD, Katy, TX **2021 – 2022**

- Tutored students in mathematics to build STAAR test proficiency; performed substitute teaching duties.

Instructor, Mathematics | Fortis Institute, Houston, TX **2020 – 2021**

- Taught mathematics, including College Algebra.

EDUCATION

M.S., Mechanical Engineering – University of Texas–Pan American

B.S., Mechanical Engineering – University of Texas–Pan American

CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

Project Management: CAPM & PMP coursework

Certificates: Beginning Python Programming; AutoCAD 2023 2D; SolidWorks – Intro to the 3D Editor

In Progress: SQL for Beginners; SQL for Data Analysis; Excel (Intermediate & Advanced); Technical Writing

Training & Affiliation: ISO processes (in-house training); Member, Society of Allied Weight Engineers (SAWE)