



TACTICAL SYSTEMS

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## Propulsion Department – Mechanical Engineer

### About the Company

3D Tactical Systems is a leading aerospace company with over a decade of operational expertise. The company delivers pioneering UAV and UAS solutions that cater to a variety of applications. Specializing in the analysis, design, integration, and testing of long-range and high endurance drones, the company is at the forefront of rapid prototyping cutting-edge solutions for its clients.

Our small yet highly qualified team diligently works towards achieving our mission statement, fostering a dynamic working environment while providing valuable opportunities for personal growth and development. Good company culture and collaboration are the core attributes that the company upholds to ensure it achieves its long-term objectives. As a rapidly expanding force, 3D Tactical Systems seeks exceptional talent to contribute to our innovative aerospace solutions.

Company Website: [www.nextech.online](http://www.nextech.online)

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### Job Description

We are seeking a talented Mechanical Engineer with expertise in gear design and analysis to join our Propulsion department. As a Mechanical Engineer, you will contribute to the analysis, design validation, and future improvements of 3DTS's propulsion department. Day to day, you will be expected to analyse data, define loads and environments, perform detailed simulations and physics-based analysis, guide design, and help validate analysis, design, and system performance through test. Scope of work may additionally extend to supporting ground and flight test systems, propulsion development, flight operations, and customer interaction.

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### Duties and Responsibilities

- Perform multiphysics structural, thermal, vibration, fatigue, and fracture analyses of geared components, considering factors such as load distribution, stress concentration, and material properties.
- Create system, subassemblies, and individual parts analytical models.
- Collaborate with the design team to finalize hardware designs for components, ensuring compliance with performance and safety requirements.
- Conduct structural and thermal finite element analysis of system components, ensuring performance, safety, and lifetime analysis studies.
- Develop standard practices for structural analysis and common hand calculations to expedite hardware development.
- Oversee and approve detailed CAD designs and drawings.
- Provide support for manufacturing requirements and quality assurance.
- Collaborate with other departments and other multi-disciplinary projects.
- Provide system and subsystem level integration and testing support in RSA and at clients abroad and provide recommendations based on analysis.
- Write design, test, and other technical project reports/documents.



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## Experience and Requirements

- Bachelor's degree in mechanical engineering, aerospace engineering, or related field.
- 3+ years of experience performing design analysis for geared systems using Ansys or related analysis software.
- Strong foundation with thermal, structural, vibration and life assessment analysis best practices.
- Strong foundation on ductile and brittle material failure theories.
- Prior experience instrumenting hardware using strain gauges, thermocouples, and accelerometers to anchor FEM results.
- Fluent in English.

## Preferred Skills

- Master's degree or greater.
- Experience with supporting failure investigations.
- Familiarity with using SolidWorks CAD.
- Proficient using ANSYS Workbench.
- Experience working in a fast-paced development program.

## Important to note:

- Own car is essential.
- Permanent role with a 3 months' probation period.
- Background check and references required.

At 3DTS, we embark on a mission to elevate the possibilities of unmanned aerial vehicles. The journey isn't simple; it demands diligence, unwavering determination, constant innovation, collaborative teamwork, unyielding grit, and a steadfast commitment to conquering seemingly insurmountable challenges. We take pride in supporting one another, setting aside egos, and immersing ourselves in tasks both significant and minute. If this sounds like you then join our pioneering team and launch your career to new heights today!