



Mechanical Design Engineer

General description:

Working closely with a team of experienced engineers, you will develop, prototype, test and ensure production readiness of parts, assemblies and systems. Hands on experience in a prototyping environment is essential; as all of our designers take part in the initial production of their designs. This type of environment demands a creative mindset, where a challenge is the motivation to get the job done.

Tasks assigned include:

- preparation of models, drawings, plans, designs, calculations, costs estimates, and bills of material in accordance with established codes, standards, drawings or other specifications

Prerequisite Skills and Qualifications:

- Diploma or Bachelor's degree in a related field of engineering
- Three (3) year of applicable experience
- Experience in mechanical component design
- Experience and understanding of fundamental design calculations and techniques used in analysis
- Proficiency in 3D CAD applications, ideally SolidWorks
- Proficiency in blue print reading and creation in accordance with ASME Y14.100 and associated standards
- Experience with geometric dimensioning and tolerancing (GD&T) in accordance with ASME Y14.5
- Demonstrated application of analytical skills
- Technical report writing and presentation experience
- Demonstrated ability to effectively trouble shoot and problem solve
- Excellent communication skills, both oral and written
- Ability to travel internationally. Possess or able to acquire and maintain a valid passport
- Must be able to secure a secret security clearance

Desirable:

- Proficiency in Finite-Element-Analysis (FEA) simulation
- Knowledge of typical structural metals and associated welding practices
- Knowledge of surface treatments required for adhesion, wear, environmental protection or similar
- Knowledge of typical test equipment (i.e. accelerometers, load cells, potentiometers, transducers, etc.) and analysis of test results
- Project management experience (team or individual)
- Experience with manufacturing technologies
- Experience with Integrated Logistics Support (ILS)
- Experience working with automotive, aerospace & defense related standards (i.e. ISO 9000, AS9100, ISO/TS 16949, Stanag 4569 AEP 55 Volume 1 and 2, ITOP 4-2-508)
- Knowledge of Canadian Motor Vehicle Safety Standards (or FMVSS)
- Knowledge of reliability analysis and testing
- Knowledge of advanced Fiber Reinforced Plastics (Glass, Carbon, Aramid)



Essential Duties:

The duties associated with this position include, but are not limited to:

Technical

- Develop designs from concept through to completion adhering to customer, internal and other requirements including applicable standards
- Interpret technical requirements to develop component detailed specifications.
- Create 3D models and technical drawings using Solidworks.
- Produce drawings in accordance with ASME Y14.100 drawing standards and associated standards (i.e. ASME Y14.5, Y14.24, etc.).
- Conduct tolerance stack-up analysis on mating assemblies.
- Develop welding requirements in accordance with ANSI/AWS welding standards.
- Implementation of Engineering Change Orders (ECOs)
- Develop and document data, proposals, presentations, analysis or similar using Microsoft PowerPoint, Word and Excel.
- Conduct manufacturability assessments during development.
- Perform trade studies to ensure an optimal balance between weight, cost, risks and functionality or similar has been achieved.
- Create BOMs (Bill of Material)
- Support to create bill of labour
- Support time studies for cost evaluation
- Develop free body diagrams for components and systems to define load cases.
- Evaluate and calculate component stresses resulting from defined load cases.
- Search, open and create Engineering data using Enterprise PDM.
- Conduct material selection based on resulting stress and trade off studies.

Personal & Project Management

- Assist in developing project plans and schedules initiated by the supervisor.
- Assist in developing risk mitigation plans initiated by the supervisor.
- Develop and propose new processes or standards to advance the efficiency and capability of the department.
- Review and resolve issues associated with production, productivity, quality, and customer expectations.
- Present and participate design reviews.
- Estimate and track individual task durations.
- Continuously work to identify opportunities for improvement (schedule, design, process or similar).

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- Liaise with other departments within the company to ensure others have the necessary information required to meet the projects requirements.
- Liaise with other departments to ensure project deliverables are met.
- Maintain individual task status to be reviewed by a supervisor as required.
- Create and conduct updates using the Engineering Change Order (ECO) process.
- Assist supervisor with information required to support the Configuration Review Board (CRB) review processes.
- Other duties as required.