



## Principal Technical Specialist Engineer– Job Description

(Job Code and Level: EDESTEC004)

### **Definition:**

Design is defined as: Designing systems, processes, methodologies as well as component and vehicle designs to enhance the overall vehicle performance for the customer and environment. Transforming concepts into prototypes for testing, validating and improvement for ultimately mass volume production. This includes designing to meet costs, timing and quality requirements.

Each level of Engineer builds on the level below as experience and learning enables more complexity and responsibility within the role.

### **Overall Purpose of the Role:**

To be the technical lead for design projects, with responsibility for the planning and deployment of the design of specific new products, technologies, components and their integration into systems (e.g. diesel or gasoline engines, electric or electronic systems, air conditioning systems, vehicle interiors). Provide technical liaison with supplier, manufacturing, design engineering and customers. Produce high quality solutions for projects, and be able to apply engineering knowledge and principles to devise innovative solutions to unique design problems. Responsible for the overall design content from concept through to delivery into manufacture, using innovative engineering skills to ensure seamless integration. Works on multiple major projects of the highest complexity requiring forefront-of-field, innovative solutions. Decisions have a large impact and results have a critical impact on the objectives and goals of the department. Acts independently at the organisational level, being self-supervising, within guidance and expectations of divisional management. Performance affects the function's image.

### **Key Responsibilities:**

#### **General and Task Management**

- Provide considerable in-depth technical knowledge and expertise on complex major projects requiring cutting-edge innovative, original solutions

- Provide technical leadership to the team
- Develop and implement best practice engineering vision, strategy, policies, processes and procedures to aid and improve operational performance
- Analyse the Engineering and Project input in order to interrogate it, reach an agreement and integrate it formally in a Design solution
- Lead the development of features and designs for future vehicle solutions
- Utilise prior expertise to involve global partners, suppliers and academia to leverage invention and create production ready innovations
- Develop and implement engineering design solutions in-house, with suppliers or academia for future technologies
- Develop technical specifications and supplier documentation for new technologies
- Perform design analysis and product evaluations for future technology
- Responsible for rapid prototyping, specifying requirements and evaluation of designs, analysis, development, testing and control of features, as well as a high level of independent judgement
- Exercise technical direction for products of expertise
- Provide technical expertise of the product features to personnel supporting the assigned project
- Lead advanced technical work that develops new technologies and/or product features
- Lead the development of new features and system requirements
- Show solid judgement and build consensus, particularly in the face of competing design requirements
- Research concept ideas using mathematical modelling to work out whether new developments and innovations would work and be cost effective
- Produce design ideas, based on research, into technical plans for prototypes using computer-aided design (CAD) and computer-assisted engineering (CAE) software
- Analyse the design proposals and the technical information in order to identify the issues arising during product development, defining and implementing adequate solutions in order to reach a feasible proposal with a high form and aesthetic quality
- Attend design reviews to present design ideas and to discuss and critique alternative design solutions
- Be a subject matter expert on systems under specialty and with a detailed understanding of how systems interact
- Cost proposals
- Carry out simulations of products for new and prototype projects using in-house software for the customer and provide support and feedback on design
- Analyse and manage multiple design related issues to identify root cause
- Modify designs based on the analysis to re-test and analyse until design meets specification requirements
- Lead the development of innovative solutions to unique problems
- Plan and manage multiple projects simultaneously. Estimate, track and complete projects on time and within budget

- Conduct benchmarking studies to determine best practices/designs and future trends
- Manage activities of a complex nature where there are limited precedents
- Identify and deploy the technical skill sets, resource levels and systems to deliver projects, including the engagement of external resources as required
- Monitor the completion of tasks and ensure good performance and record on appropriate systems
- Develop, implement and manage key performance indicators (KPIs) for each area of responsibility
- Ensure KPIs are met by working to the overall plan, including management of, and reporting

### **People Management**

- Lead a group of specialist engineers and support with staying up to date with technological changes and advancements
- Manage contractors on site to ensure they meet legal and company requirements
- Provide leadership and guidance to a group
- Train both team and broader organisation members and provide guidance to several groups of the organisation
- Motivate and coach the team to operational success
- Consistently promote high standards through personal example and roll out through the team so that each member of the team understands the standards and behaviours expected of them

### **Financial Budget and Control**

- Hold responsibility for departmental budget
- Achieve goals within budget within time deadlines

### **Relationship Management**

- Stay current and up to date on any technology changes that may affect engineering design and development and advise others of any impact
- Develop technical relationships with key suppliers and business partners
- Provide technical guidance to departments and many groups of the organisation, be seen as a go-to specialist for area of expertise
- Develop and maintain strong relationships with internal and external stakeholders to ensure optimal performance and work collaboratively, negotiate and engage with key stakeholders to facilitate delivery and compliance with the engineering strategy
- Communicate with stakeholders the impact of market change and potential effects on engineering design and development. Recommend solutions without compromising quality or service while optimising cost
- Contribute to new business initiatives and projects and review and communicate the impact on engineering activities

### **Self Management**

- Support, comply and ensure complicity with Health & Safety regulations, the Company Handbook, Quality and Environmental standards, and all other Company policies and procedures
- Embraces personal challenge
- Confident, rounded thinking
- Is self aware
- Is resilient, influential, optimistic and open to change
- High levels of motivation and action orientated
- Engages interest and participation of others
- Takes ownership for team cohesion and has a collaborative approach to working with others
- Undertake continuous training and development to maintain and further develop expertise and stay ahead of technological developments
- Anticipates and overcomes obstacles
- Makes useful links to arrive at insightful plans and solutions
- Excellent attention to detail skills

### **Skills and Attributes:**

- Exercise considerable initiative/judgement in work methods and in interpreting and delegating work requirements/goals
- In depth knowledge and expertise of area of specialism
- Advance engineering principles, theories and concepts
- Ability to coach, mentor and develop staff of various skills and personalities, including both technical staff and other managers
- Excellent verbal and written communication skills
- Excellent organisation skills, able to plan, analyse and challenge
- Highly developed analytical skills
- Able to manage a wide variety of activities at the same time
- Able to work cross functionally and collaboratively with many stakeholders
- Solid understanding of all people related processes and procedures
- Commercial and financial acumen with ability to balance material usage
- Able to identify root cause of any losses
- Able to work well with and mentor both high and low performers in a team or group environment, setting expectations, and providing input and feedback in a helpful way that fosters accountability
- Strong technical mind-set and able to read and interpret technical data and translate to others
- Highly numerate with the ability to research, assemble, manage and manipulate numerical information
- Results orientated and organised with the ability to plan and deliver against deadlines utilising Project Management skills

### **Qualifications and Experience Levels:**

- Relevant business/commercial or manufacturing/engineering degree is preferred, or HNC, BTEC Professional Level 4 Award or equivalent NVQ Level 4 qualification.
- Membership of an industry related Professional Body would be advantageous
- Strong working knowledge of 2D and 3D CAD
- Ability to design products, systems, processes and layouts
- Experience of FMEA (Failure Mode Effects Analysis), Kaizen/A3 (continuous improvement and problem solving) process improvement and Poka Yoke (error proofing) techniques
- Extensive work experience in a high volume manufacturing environment, preferably automotive
- Consistently demonstrates extremely high levels of technical knowledge, ingenuity and creativity
- Broad knowledge about the design and operation of systems outside of speciality
- Proven leadership and people management experience
- Experience of testing and prototyping
- Distinguished record of creativity and innovation

**Example roles this job description may cover:**

- Group Technical Leader
- Technical Supervisor