



## Senior Engineer, Design – Job Description

(Job Code and Level: EDES003.1)

### **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:**

Research and develop ideas for new products, technologies, components, processes and the systems used to make them. Work to improve the performance and efficiency of existing products. Provide support to the new-business and vehicle-launch team and work to ensure that all aspects of CAD design are created to fully meet the high specifications set. Responsible for ensuring the success of the design from inception through to delivery into manufacture, using innovative engineering skills to ensure seamless integration. Very hands on position, demanding high levels of creativity and flexibility. Works on multiple highly complex major projects requiring innovative, original solutions. Responsible for large and fairly complex projects involving a large team or group. Works mostly independently with minimal supervision. Work is reviewed infrequently by organisational management/head. Results are key to successful completion of major projects/programmes.

### **Key Responsibilities:**

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

- Plan multiple projects simultaneously. Estimate, track and complete projects on time and within budget
- Ability to capture and specify the design requirements

- Research concept ideas using mathematical modelling to work out whether new developments and innovations would work and be cost effective
- Analyse the Engineering and Project input in order to interrogate it, reach an agreement and integrate it formally in a Design solution
- Produce design ideas, based on research, into technical plans for prototypes using computer-aided design (CAD) and computer-assisted engineering (CAE) software
- Analyses the design proposals and the technical information in order to identify the issues arising during the 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
- 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
- Make design changes on existing products
- Track design changes
- Estimates, tracks and completes projects on time and within budget
- Identifies problems and actively devises appropriate innovative solutions to unique problems
- Control of Bill of Materials (BoM), CAD Models and Engineering Drawings
- Keep up with current and developing engineering trends
- Undertake special projects as required
- Contribute to continuous improvement activities
- Quality control of work by appropriate reviews
- Support and lead process improvement activities
- Support technical staff and/or junior engineers
- Write reports and present progress at project meetings and to clients
- Achieve goals within budget
- Conduct benchmarking studies to determine best practices/designs and future trends
- Attend various meetings and action/communicate instructions
- Make presentations
- Undertake continuous training and development
- Independently determine approach and assigned tasks

### **People Management**

- Lead groups of Engineers and Technicians if required
- Provides guidance to other team members
- Train both team and broader organisation members

### **Relationship Management**

- Manage and work with vendors
- Represent work team at reviews and cross-organisational team meetings
- Liaise and communicate with other departments, customers, suppliers and other service providers
- Work with other team members of the wider engineering team
- Develop and maintain good relationships with internal and external contacts at all levels including other companies, universities and research institutes
- Develop technical relationships with key suppliers and business partners

### **Self Management**

- Comply with the Health, Safety and Environmental Policies
- Embraces personal challenge
- Confident, rounded thinking
- Is self aware
- Is resilient, assertive, optimistic and open to change
- Engages interest and participation of others and has a collaborative approach to others
- Actively committed to team development
- High levels of motivation and action orientated

### **Skills and Attributes:**

- Exercise substantial initiative/judgement in work methods and interpreting goals
- Work independently and is reviewed infrequently with minimal supervision
- Self-supervising within the guidance and expectations of divisional management
- Excellent verbal and written communication skills
- Communicate with clarity and demonstrate excellence in approach to work and people activities
- Excellent organisation skills
- Excellent problem solving skills
- Ability to manage a wide variety of activities at the same time
- Ability to plan, analyse and challenge
- Able to work cross functionally and collaboratively with many stakeholders
- Solid understanding of all people related processes and procedures
- Financial acumen with ability to balance material usage
- Able to identify root cause of any losses
- Very knowledgeable in all technical areas of the group's scope, or having demonstrated ability to achieve that level of proficiency in a short period of time
- Able to effectively train people outside his/her work group.
- Able to give effective presentations to critical/high level customers and effectively represent work group on review panels and cross-organisational teams
- Able to write convincing proposals and reports with all necessary backup material for external consumption

- Able and willing to balance the needs and desires of a group with those of the department, and take ownership of higher level institutional goals
- Able to estimate cost and manpower for assigned projects
- Able to present options and persuasively advocate for proposals
- Able to work productively with vendors
- Proven leadership skills

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

- Relevant manufacturing/engineering degree is preferred, or HNC, BTec Professional Level 4 Award or equivalent NVQ Level 4 qualifications.
- Membership of an industry related Professional Body would be advantageous
- Ability to use CAD
- Ability to design 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.
- Leadership and people management training

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

Senior Designer  
Senior Product Engineer