



## **Design Engineer – Job Description**

(Job Code and Level: EDES003)

### **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. Work on many phases or sub-tasks of large projects working under instruction of technical specialist engineer or entire projects of moderate complexity. Works under general supervision, reviewed at project milestones and on completion. Plans projects or subtasks so they may be tracked and presented. Results impact project/programme completion.

### **Key Responsibilities:**

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

- 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 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
- 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
- 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 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 and/or support technicians and trainee engineers
- Train people within own work group

### **Relationship Management**

- Liaise and communicate with other departments, customers, suppliers and other service providers
- Be an effective team member, working with supervisor and colleagues to ensure smooth workflow with maximum output

### **Self Management**

- Comply with the Health, Safety and Environmental Policies
- Assertive, optimistic, resilient and welcomes change

- Engages interest and participation of others and has a collaborative approach to working with others
- Proactively contributes to the team
- Is self aware
- Shows moral courage, openness and honesty in all dealings
- Good team-working skills
- Self-motivated, flexible, proactive and committed

### **Skills and Attributes:**

- Independently determines approach to assigned tasks
- Strong analytical and numeracy skills
- Strong problem-solving skills with high attention to detail
- A creative, logical approach for generating new ideas and solutions, with the ability to transition through to part development
- A sound knowledge of computer aided design (CAD) software, technical drawings and 3D modelling
- An excellent grasp of engineering and design principles
- A knowledge of the qualities of metals and other materials
- Excellent communication and negotiation skills
- An understanding of manufacturing processes and construction methods
- Ability to plan and organise through several project stages
- An appreciation of wider business demands
- An awareness of the environmental impact of design ideas
- Strong PC skills, including Microsoft Project
- Able to effectively train his/her work group and effectively support work teams within the work group.
- Able to give effective presentations to general audiences and write convincing proposals and reports with all necessary backup material for department consumption
- Knowledgeable in some technical areas of the group's scope, or having demonstrated ability to achieve a high level of proficiency in a short period of time
- Involved in projects involving multiple people
- Ability to support group to achieve goals within budget
- Demonstrated fiscal responsibility
- Ability to work well with others in a team environment, providing input and feedback in a helpful manner
- Ability to effectively communicate organisational goals to team
- Able to interact well with vendors
- Able to exercise some latitude and technical judgement in deciding work methods

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

- Relevant manufacturing/engineering degree preferred, or ONC, A Levels, BTEC Diploma Level 3 or equivalent NVQ level 3 qualification

- Membership of an industry related Professional Body would be advantageous
- Experience of using Auto CAD, Pro Engineer, CATIA V5, Unigraphics NX
- Experience in BOM (Bill of Material) structures
- Understanding of legislation and standards
- An understanding of Lean Manufacturing
- Experienced with a number of systems. Becoming a subject matter expert in at least one area or system
- Working knowledge of a number of other areas of specialisation

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

- Product Designer