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Glossary

Aerospace Engineering – The branch of engineering that focuses on the design, development, testing and maintenance of aircraft, spacecraft and space-related technologies.

Aerodynamics – The study of how air flows around moving objects, such as aircraft, to improve flight performance and efficiency.

Aircraft – Any vehicle designed to fly within the Earth's atmosphere, including aeroplanes, helicopters and drones.

CAD (Computer-Aided Design) – Computer software used by engineers to create, modify and analyse technical drawings and three-dimensional models.

Circuit – A closed path through which electric current flows, allowing electrical devices to operate correctly.

Code – A set of instructions written in a programming language that tells a computer or electronic device how to perform specific tasks.

Computer Engineering – The branch of engineering that combines computer science and electronics to design computer hardware, software and embedded systems.

Creativity – The ability to generate original ideas and develop innovative solutions to engineering problems.

Design Engineering – The branch of engineering dedicated to creating, developing and improving products by combining technical knowledge, creativity and practical problem-solving.

Electrical Engineering – The branch of engineering that deals with electricity, electronic systems, power generation and electrical equipment.

Engineer – A professional who applies scientific and mathematical principles to design, build, test and improve products, systems and technologies.

Engineering Design Process – A systematic sequence of steps used to identify a problem, develop solutions, create prototypes, test ideas and improve a final product.

Flight – The movement of an aircraft through the atmosphere using aerodynamic forces such as lift and thrust.

Hardware – The physical components of a computer system, including the processor, memory, keyboard, monitor and storage devices.

Innovation – The development and application of new ideas, technologies or methods that improve existing products, processes or services.

Manufacturing – The industrial process of producing products on a large scale using machines, tools and skilled workers.

Material – Any substance used to manufacture or construct a product, such as metal, plastic, wood or composite materials.

Mechanical Engineering – The branch of engineering concerned with the design, manufacture and maintenance of machines, engines and mechanical systems.

Motor – A machine that converts electrical or other forms of energy into mechanical movement.

Power System – A network that generates, transmits and distributes electrical energy from power plants to homes, businesses and industries.

Product Development – The complete process of designing, testing, improving and preparing a product before it is manufactured and sold.

Programming – The process of designing and writing computer programs using programming languages to solve problems or control devices.

Project – A planned engineering activity with specific objectives, resources and deadlines aimed at producing a particular result.

Prototype – An early working model of a product that is built to evaluate its design, test its performance and identify possible improvements.

Renewable Energy – Energy obtained from natural sources such as sunlight, wind, water or geothermal heat that can be naturally replenished.

Robot – A programmable machine capable of carrying out tasks automatically or with limited human intervention.

Satellite – An artificial object placed into orbit around the Earth or another planet for communication, navigation, weather forecasting or scientific research.

Software – The collection of computer programs and applications that enable a computer or electronic system to perform specific functions.

Spacecraft – A vehicle specially designed to travel or operate beyond the Earth's atmosphere for exploration, research or transportation.

Specification – A detailed description of the technical requirements, dimensions, materials and performance expected for a product or engineering system.

Sustainability – The principle of developing technologies and products that meet present needs while reducing environmental impact and preserving natural resources.

Sustainable Design – An approach to engineering design that aims to minimise waste, reduce energy consumption and protect the environment throughout a product's life cycle.

System – A group of interconnected components that work together to perform a specific function or achieve a common objective.

Technology – The practical application of scientific knowledge to create tools, machines, systems and processes that solve real-world problems.

Testing – The process of evaluating a product or system to ensure that it is safe, reliable, efficient and meets all design requirements.