

Instructional Terminology

ENGINEERING 15.0000.00



A

AC Voltage - alternating current; an electric current that reverses direction

AC/DC - alternating current and direct current; an electric

Acceleration – the rate of change of a velocity per unit of time ($a = \Delta v / \Delta t$)

Accuracy - the degree to which the result of a measurement, calculation, or specification conforms to the correct value or a standard; exactness

Aeronautical engineer – a person who designs machines that fly; also known as Aerospace engineer

Aerospace engineer —a person who designs machines that fly

Alloy – a mixture of metals

Alternating Current – electric current that reverses direction

Alternative - available as another possibility

Ampere (AMP) – a measure of electrical current flow

Amplitude - the maximum displacement from a zero value during one period of an oscillation of a wave

Analog Electronics – electronics with continuous variable signal within a certain range

Analysis – a detailed examination of the elements or structure of something

Analyze – to examine of the elements or structure of something

Archimedes Principle - any object wholly or partly immersed in fluid will be buoyed up by a force equal to the weight of the fluid displaced by the object

Architectural engineer - an engineer who specializes in the structural, mechanical, and electrical construction of buildings

Area - a part of an object or surface

Assembling – putting together individual parts to create a final product

Assembly – individual parts that fit together to create a final product

Assessment – an evaluation technique

Atomic – relating to an atom, the smallest particle of a chemical element

Atomic engineering – the branch of engineering concerned with the application of the breakdown of atoms as well as the fusion of atomic nuclei or other subatomic physics; also known as nuclear engineering

Automation – a machine or system that operates independently with minimal outside or human control

Autonomous - acting independently or having the freedom to do so

Axle - a central shaft for a rotating wheel or gear

B

Balance – a condition in which different elements are equal or in the correct proportion

Bar graph - a chart with rectangular bars identifying lengths proportional to the values that they represent

Beam - a horizontal part of a structure that is supported at both ends

Bernoulli's Principle - the principle in hydrodynamics that states an increase in the speed of a fluid occurs at the same time as its static pressure decreases

Bill of Materials (BOM) – See parts list

Binary – 0 or 1, a base two system of measurement

Biological – relating to the science of life or living matter in all its forms

Biomedical engineering — related to both biology and medicine

Biometrics — the method of patterning a machine's structure based on structures found in nature; i.e., humanoid robotics

Bit — in computer terms related to something that holds just a single piece of binary information

Box plot - a convenient way of graphically depicting groups of numerical data through their quartiles

Boyle's Law – the volume of a gas at a constant temperature is inversely proportional to its pressure

Brainstorming – when an individual or group of people generate a

variety of ideas based on a single problem or concern

Bridge —a structure built to allow people and vehicles to pass over something, i.e., rivers, ravines, canyons, etc.

Buoyancy — the upward force on an object in a fluid, equal to the weight of the fluid displaced by the object; the ability or tendency to float in water or other fluid

By product – something produced in the making of something else

Byte — a unit of computer storage containing eight bits

C

Calibration – action of adjusting an equipment or machine to match industry standards.

Caliper - an instrument for measuring external or internal dimensions: measuring thicknesses and diameters to a very high degree of precision

CAM - a rotating or sliding piece in a mechanical linkage used especially in transforming rotary motion into linear motion or vice-versa

Cantilever — a structural member which projects beyond its support and is supported only at one end

Capacitor — a device capable of storing electric charge

Capital – accumulated finances or money, goods, and tools used in the production of other goods

Center of gravity – the point at which the entire weight of a body may be considered as concentrated so that if supported at this point the body would remain in equilibrium

Chemical engineer – an engineer whose principal focus is related to converting basic raw materials into a variety of products; supports the design and operation of plants and equipment to perform such work

Circuit — in electricity and electronics, a series of electrical components through which electricity may flow

Circumference - the enclosing boundary of a curved geometric figure; the perimeter of a circle $c=\pi d$ or $c=2\pi r$

Clamp - a device for strengthening or supporting objects or fastening them together

Client – a person using the services of a professional person or organization

Closed system - a physical system on which no outside influences act; closed so that nothing gets in or out of the system and nothing from outside can influence the system's behavior or properties

Closed-loop system – a system that uses feedback from the output to control the input

Coefficient of expansion - describes how the size of an object changes with a change in temperature

Coefficient of friction - the force required to move two sliding surfaces over each other

Coherent - consistent, logical; forming a whole

Column – a vertical support, usually part of a structure

Communication system – a system that forms a link between a sender and a receiver, making possible the exchange of information

Component – a part or element of a larger whole

Composite – a material formed from a combination of other materials

Compound – a substance of two or more elements in fixed proportions

Compound gearing system – a gearing system that consists of two or more gears

Compound machine – a mechanism that consists of two or more simple machines

Compression – a force that pushes on or squeezes a material

Computer-Aided Design (CAD) – the use of a computer system to assist in the creation, modification, analysis, or optimization of a design

Computer-Aided Manufacturing (CAM) - techniques for employing computers in manufacturing processes

Computer-Numeric Control (CNC) –a combination of a computer, a digital control system and a machine that is used to make objects

Conceptual design - the creation and exploration of new ideas

Conditioning - a process in which heat, chemicals, or mechanical forces are used to change the internal structure of a material

Conduction - the process by which heat or electricity is transmitted through a substance when there is a difference of temperature or electrical potential between adjoining regions, without movement of the material

Conductors - a material or device that conducts or transmits heat, electricity, or sound, esp. when regarded in terms of its capacity to do this

Conservation - measurable property of a physical system that does not change, for example, conservation of energy and mass

Constraint – a limit, such as appearance, budget, space, materials, or human capital in the design process; a limit to the design process

Construction engineer – a person who deals with the designing, planning, construction, and management of infrastructures such as highways, bridges, airports, railroads, buildings, dams, and utilities

Contractor - a person who is hired to furnish supplies or perform work

Convection – the transfer of heat energy by moving a heated substance from one place to another

Correlation - the statistical relationship between two variables

Cost estimation - the approximation of the cost of a program, project, or operation

Creativity — the ability to make or bring a new concept or idea into existence

Criteria – principles or standards by which something may be judged; requirements that a product has met or must meet

Current – the total amount of electrons flowing through a circuit per unit time; measured in Amperes (Amps)

D

Dam — a structure built across a body of water to control or block its flow

Data – facts and statistics used for reference or analysis

Database – a collection of data organized for easy access

DC voltage – direct current, current that flows in one direction

Dead loads — material used to build the structure itself which does not move

Decision matrix — an arrangement of elements to help solve a problem

Degree of freedom — the ability to move in a certain direction

Design – a plan or drawing produced to show the look and function or workings of something before it is built or made

Design brief – a written plan that identifies a problem to be solved, its criteria and constraints

Design process — a systematic problem-solving strategy used to satisfy human wants or needs

Design proposal — the act of offering or suggesting something for acceptance

Design software – used to create two- or three-dimensional models

Design statement – a part of the design brief that challenges the designer, describes what a design solution should do and identifies the degree to which the solution must be executed; also known as a problem statement

Deviation – the difference between the observed value and the known true value

Devices - an item made or adapted for a particular task, esp. a mechanism or electronic instrument

Diagram – a drawing that outlines or explains how something works

Diameter - a straight line passing from side to side through the center of a circle or sphere

Digital electronics — uses digital logic to operate an electronic system with only two states: ON or OFF

Digital multimeter – a device used to measure the voltage or amperage in an electrical circuit

Dimension — sizes and position placed on a mechanical drawing that note an object's linear measurements, as well as the location of an object's features

Displacement — the difference between the initial and final position of a point or the weight or volume of a fluid moved or shifted by a floating body

Documentation — the organized collection of records and documents that describe a project's purpose, processes and related activities for future reference

Drag — a force that causes resistance to moving through the air, resistance of the air against the forward movement of the plane, the

force that acts opposite to the direction of motion caused by friction and differences in the air pressure, and the resistance of the motion of an object through a fluid

Dynamic loads — loads caused by the forces of motion

E

Economics — the social science that deals with the supply of and demand for goods and services effects

Elasticity - the ability of an object or material to resume its normal shape after being stretched or compressed

Electrical engineer—a person who designs electronic systems and products

Electrical power - the rate at which electrical energy is transferred by an electric circuit

Electrification—the process of making electricity available within a region or country

Electromagnet—a metal core that is rendered magnetic by the passage of an electric current through a surrounding coil

Electromagnetic oscillations – a collection of photons whose velocity in a vacuum equals the speed of light

Electromagnetism - the relationship between electric and magnetic fields and their interactions with each other and with electric charges and currents

Electron —a part of the atom that contains a negative charge and orbits the nucleus

Electronics — the study and control of the flow of electrons, usually involving voltage

Element – a basic part

Energy — the ability to do work

Engineer - a person who is trained in and uses technological knowledge to solve practical problems

Engineering — the process of designing solutions

Engineering notebook – a notebook to record ideas generated while an engineer researching and designing a new product or process

Engineering process — an ongoing cycle that applies math, science, and engineering principles to the decision making process; also known as the engineering design process

Entrepreneur — a person who establishes a new enterprise or business and assumes financial risk in the hope of gaining wealth

Equilibrium — the sum of all forces is equal to zero ($\Sigma F=0$)

Ergonomics - the study of workplace equipment design or how to arrange a workplace so that people interact and work safely and efficiently

Ethics — a set of moral principles or values; a branch of philosophy that considers one to apply concepts of right and wrong and taking responsibility for one's own actions

Evaluate – to form an idea of the amount or value of a product or process

Evaluation — the process of collecting analyzing information and data to determine how well a design meets requirements

Experimentation — the act of conducting a controlled test on a prototype

Extrusion – a manufacturing process that forces metal through a shaped opening

F

Fabrication – a project made from raw materials

Failure analysis – experimenting with an object or process when it fails to determine what went wrong

Fastener – a hardware device that mechanically joins or affixes two or more objects together

Feasibility – determining if something is achievable

Feedback — information about the output of a system that can be used to adjust it at the input

Fiber optic – a cable that is used to carry light

Finishing – a manufacturing process that changes the surface of a manufactured item to achieve a certain property flow through the external circuit

Fluid — a gas or liquid that tends to take the shape of its container

Fluid power – power created by pressurized fluids, either gasses or liquids

Force — the transferring of energy from one object to another object

Form — the principle of design that describes by lines and shapes

Forming – a metalworking process where the shape of the metal is changed without adding or removing material

Formula – a mathematical relationship or rule expressed in symbols

Frequency – the rate at which something occurs over a particular period or in a given sample

Friction – resistance to the relative motion of two solid objects along the surfaces in which they touch

Fulcrum –the point around with a lever turns or is supported

Function – the kind of action or activity proper to a person, thing or institution; the purpose for which something is designed or exists

G

Gantt chart - a project timeline that takes into account the number of resources and the timing of tasks that make up the project

Gear – a wheel with teeth that will allow the transfer of power when coupled with another gear

Gear ratio – the ratio of the rotational speeds of the first and final gears in a train of gears or of any two meshing gears

Gear reduction – an increase or decrease in rotational speed based on the gear ratio

Generator – a device that converts mechanical energy to electrical energy

Geotechnical engineer - a type of civil engineer concerned with the engineering behavior of earth materials

Gram - a metric system unit of mass

Graph –a diagram showing the relation between variable quantities, typically of two variables measured along a pair of axes at a right angle

Graphical communications – a form of communication that uses graphical representations to illustrate data and concepts

Gravity – the force of attraction by which objects tend to fall toward the center of the earth

H

Histogram - a bar chart that shows the frequency of an occurrence for a predetermined set of values

Horsepower - a measure of power or the rate that work is being done; one horsepower is equivalent to 745.699872 watts

Hydraulic system - in fluid dynamics an increase in flow, an increase in the speed of the fluid coincides with a decrease in pressure or a decrease in the fluid's potential energy; see also Bernoulli's principle

Hydraulics - a fluid system that uses a liquid for its transfer medium

Hypothesis – an assumption made based on limited evidence as a starting point for further investigation

I
Impact – the effect or influence of one thing on another

Implementation – to put into effect according to a definite plan or procedure in an engaging way such as with text, pictures, sound, and video

Inclined plane – a flat sloping surface along which an object can be pushed or pulled

Industrial engineer - an engineer who works to optimize complex processes or systems

Inertia — the property of an object to resist a change in movement

Ingenuity — a person’s natural ability to solve problems

Innovation – an improvement of an existing technological product, service or process, system or method of doing something

Innovative activities - activity focused on using innovative approaches to problem-solving

Input – something put into a system, such as resources, in order to achieve a result

Insulator — a material that does not allow electrons to pass freely

Integrated Software Environment (ISE) - software tools, such as an editor, compiler, or linker that are used to develop application software or "App" and are integrated to enable software development to be user friendly

Interference – the amount of overlap that one part has with another when assembled

Invention – a new product, system or process that has never existed before, created by study and experimentation

Inverter digital - outputs a state that is opposite that of the input power, i.e., changes Direct Current to Alternating Current

Isometric drawing – a form of pictorial drawing in which all the drawing axes form equal angles of 120 degrees with the plane of projection

Iteration - the act of repeating a process to reach a desired goal or target

Iterative – describing a procedure or process that repeatedly executes a series of operations until some condition is satisfied

Iterative procedure - a process which may be implemented by a loop in the routine

J

Joule – a derived unit of energy in the International System of Units (SI)

Just in time - ordering raw material in the quantity and time needed to produce an ordered product; also a product not built until an order for that product is in place

K

Kilogram – 1000 grams; a standard unit of mass in the metric system equivalent to 2.2 pounds

Kilometer - 1000 meters: a standard unit of length in the metric system equivalent to 0.621371192 miles

Kinematics — the study of motion

Kinetic energy — energy that is in motion or a result of potential energy being released

L

LASER (Light Amplification by the Stimulated Emission of Radiation) - a device that produces a concentrated and coherent beam of light

Lean Manufacturing – processes to eliminate waste to improve efficiency in manufacturing

Lever — a plane (stick or bar) which has a fulcrum or pivot point to create mechanical advantage

Lift — a component of aerodynamic forces acting on an object in flight; a force produced that works against gravity

Live loads — a moving, variable weight added to the dead load or intrinsic weight of a structure or vehicle

Load - a heavy or bulky object that is being carried or is about to be carried

Logarithms - the power a base is raised to in order to obtain the value; ex. the Base 10 logarithm of 100 is 2

M

Machine – a device with fixed and moving parts that modifies

mechanical energy in order to do work

Magnetism – a force that exists around magnets that attracts ferrous materials and is used in motors and generators

Maintenance – work needed to keep something in proper condition

Manufacturer — one who uses tools and machines to turn raw materials into usable objects

Manufacturing — the use of tools and machines to convert materials into usable objects

Manufacturing processes — the transformation of raw materials into finished goods

Mapping - making a representation of an area of the earth

Market research – gathering information about consumers' needs and preferences

Mass — the amount of material that an object contains materials science for analysis, design, manufacturing, and maintenance of mechanical systems

Materials — the resources from which things are made

Mathematical design — a description of a system using mathematical concepts

Mean – the average or central value of a set of numbers

Mechanical advantage — the increased force gained by using a machine

Mechanical engineer — engineering discipline that applies the principles of engineering, physics and materials science for analysis, design, manufacturing, and maintenance of mechanical systems

Mechanical power - the power produced by motion; work divided by time (Watt)

Mechanical wave - a wave that propagates as an oscillation of matter, and therefore transfers energy through a medium

Mechanics — a branch of physics involving the study of motion and movement

Mechanism — a system made up of several parts, which may include simple machines

Median – the middle number in a set of a sequence of numbers

Meter — the fundamental length in the metric system

Micrometer - a gauge that measures small distances or thicknesses between its two faces, one of any of various devices for measuring minute distances and angles

Mining engineer — engineering discipline that involves the practice, theory, science, technology, and application of extracting and processing minerals from a naturally occurring environment

Mode –the number that occurs most often in a set of numbers

Models—a three-dimensional representation of a proposed structure or object

Momentum — the quantity of motion of a moving body, measured as a product of its mass and velocity

Multimeter - an instrument designed to measure electric current, voltage, and resistance

N

Nanotechnology – the study and application of subatomic things; the science and technology of devices and materials constructed on extremely small scales, as small as individual atoms and molecules

Nanotechnology engineer - engineers who design processes and devices as small as millionths of a millimeter

Negative terminal—the terminal of a battery or other voltage source that has more electrons than normal

Newton's first law of motion—a body tends to stay at rest or in uniform motion unless acted upon by an outside force; inertia

Newton's laws - three physical laws that lay the foundation for classical mechanics and explain the relationship between the forces that are acting on a body and the motion of that body

Newton's second law of motion — the net force on an object is equal to the mass of the object multiplied by the change in velocity of the object

Newton's third law of motion — for every action there is an equal and opposite reaction

Nonrenewable – an object, item or resource that cannot be replaced

Nuclear — of, relating to or consisting of a nucleus

O

Observation –the act of noticing or perceiving

Ohm – a measure of electrical resistance

Ohm's Law — the direct current flowing in a conductor is proportional to the potential difference between its ends; $V=IR$

Open-loop system — the simplest type of system which requires human intervention to be regulated

Optimization — an act, process, or methodology that is used to make a design as useful or as functional as possible with the given criteria and constraints

Ordinate — the y-coordinate of a point on a Cartesian plane, the distance of the point from the x-axis

Orthographic projection - a type of parallel projection in which an object is depicted or a surface mapped using parallel lines to project its shape onto a plane

Oscilloscope — a device for viewing oscillations, such as electrical voltage or current, by a display on a CRT

Output – the results of the operation of any system

P

Parabolic motion – the shape of the motion of a projectile

Parallel circuit—a circuit that has more than one path for the current to flow

Parameter – a quantity that is fixed for the case in question but may vary in other case

Parametric dimension - controls the size and position of geometry; changing the dimension changes the shape of the model

Parts list – a list of materials or parts specified for a project; also known as a bill of materials (BOM)

Passive solar - accumulating and distributing solar heat without the aid of machinery

Physical design - the process of converting the conceptual design into a tangible form

Pie chart - a circular chart divided into sectors; each sector shows the relative size of each value

Plane – a flat surface on which a straight line joining any two-point would lie completely

Plasticity – the quality of being flexible or able to be molded

Plot graph - a plot graph shows data on an x-axis and frequency on the y-axis

Pneumatics – a type of fluid power that uses compressed air or other neutral gasses

Positive terminal - the terminal of a battery or other voltage source toward which electrons flow through the external circuit

Potential energy – the energy of a particle, body or system that is determined by its position or structure

Power — the rate at which energy is transferred

Precision - exact in measuring and recording: related to reproducibility and repeatability, is the degree to which repeated measurements under unchanged conditions show the same results

Presentation software - a computer program designed to allow the user to present information in an engaging way such as with text, pictures, sound and video

Pressure — force applied over a surface, measured as force per unit area

Problem analysis - the process of understanding problems and proposing solutions to those problems

Problem-solving - the thought processes involved in identifying various solutions to a concern or issue

Process – the act of going through several steps to reach a desired goal

Product – a tangible artifact produced by means of either human or mechanical work, or by biological or chemical processes

Product lifecycle – stages a product goes through from the concept and use to eventual failure or withdrawal from the marketplace

Production engineer - an engineer that design systems for producing goods and providing services

Profitability - the quality or state of making money or producing excellent or helpful results or effects

Proportions – the relationship of one thing to another in size or amount

Proposal - a plan presented before a project is started

Propulsion system - a system that provides the energy source, conversion and transmission of power to move a vehicle

Protocol – the accepted code of behavior in a particular situation

Prototype - an early sample, model or release of a product built to test a concept or process or to act as a thing to be replicated or learned from

Pulley – a grooved wheel around which a rope, belt or chain passes that is used to change the direction of a force or change the amount of force, increasing the mechanical advantage

Pump – a device that converts mechanical energy to fluid energy

Pythagorean Theorem - the square of the length of the hypotenuse of a right triangle is equal to the sum of the squares of the lengths of the other sides ($a^2 + b^2 = c^2$)

Q

Quality control – a desired standard of quality in a product or process is maintained through an identified process

Quality performance - a measurement of the performance of a product or process compared to the desired specification

R

RADAR (Radio Detection and Ranging) - a method for detecting the position and velocity of a distant object

Radians - a unit of measure for angles equal in length to the radius of the circle

Radiation – transfer of heat by temporarily transforming the heat into electromagnetic waves which then travel until another object absorbs them and then transferred back into atomic/molecular kinetic energy which is heat

Radius - the distance from the center point of a circle to any point to any point on its edge

Range – the measure of variation that is the difference between the highest and lowest scores

Ratio – the quantitative relation between two amounts showing the number of times one value contains or is contained within the other

Raw material – any natural or unprocessed resource used to make finished products

Receiver – the part of a communication system that accepts a signal or message from a channel and converts it to an understandable form

Reliability - the extent to which an experiment, test, or measuring procedure yields the same results on repeated trials

Renewable – a resource or raw material that can be grown and replaced

Repeatability – the ability to replicate or duplicate a result

Requirements – the parameters placed on the development of a product or system; the physical laws that limit the development of an idea based on the available resources

Research – the systematic study of materials and sources to establish facts and reach new conclusions

Resistance - the act or power of resisting, opposing, or withstanding

Resistance (Electrical) – the ratio of the potential difference across an electrical component to the current passing through; a measure of the component's opposition to the flow of electrical charge (measured in Ohms Ω)

Resistor — an electronic device designed to optimize the flow of current and control the voltage applied to a circuit

Resources – something that has value and can be used to satisfy human wants and needs; the items needed to get a job done

Reverse engineering – the process of taking something apart and analyzing its workings in detail, usually to understand the function, prepare documentation or construct a new or improved device based on the information

Risk – the chance or probability of loss, harm failure or danger

Robot — a programmable system that can sense its environment, compute actions, and act on the environment to perform a task or achieve a goal

Robotics — the science and technology of robots

Rolling Circumference - the distance a wheel travels in one rotation of the wheel

S

Scale - a proportion between two sets of dimensions used in developing accurate, larger, or smaller prototypes or models of design ideas

Scatter plot - a graph made by plotting ordered pairs in a coordinate plane to show the correlation between two sets of data; also known as a scatter gram

Schematic – a drawing or diagram of a chemical, electrical or mechanical system

Scientific process - making hypotheses, determining predictions from them as logical consequences and then completing experiences based on those predictions

Screw – an inclined plane wrapped around a cylinder, used as a threaded fastener

Semiconductor — a material that is neither a good conductor or a good insulator

Sender - a person or equipment that causes a message to be transmitted

Sequential — forming or following a logical or sequence

Series circuits — a circuit that has only one path for the current to flow

Shear – a force that acts parallel to the surface of the material

Simple machine – any of several basic mechanisms that are used to transmit or modify force or motion; ex. lever, wheel and axle, pulley, screw, wedge, and inclined plane

Sketch – a rough drawing representing the main features of an object or scene and often made as a preliminary study

Software engineer - engineers who work to develop computer software systems

Span - the distance a bridge extends between two supports

Specification - a set of requirements to be satisfied by a material, design, product, or service

Spreadsheet - an interactive computer application program for organization and analysis of data in tabular form

Spring – a mechanical device that stores energy by expansion or contraction due to pressure, force, or stress applied; it releases the energy and returns to shape when the force or stress is removed

Stable - able to resist collapse and deformation

Static loads — a load at rest

Statics — the study of how forces affect non-moving objects

Strain — the change in shape of a material caused by compression or tension forces stream of fluid results in a decrease in pressure

Stress – a material's internal resistance to force

Structure—a body that supports a load and resists external forces without changing shape

Subassembly – an assembled part that is part of a larger assembly

Sustainability - the capacity to maintain current needs without compromising the future. Contains three pillars: economic, environmental and societal

System – a group of interacting, interrelated, or independent elements or parts that function together as a whole to accomplish a goal

T

Technology — the process humans use to develop new products to meet their needs and wants

Tensile – ability for a material to be stretched

Tension – a force that pulls on a material

Terawatts - equal to one trillion (10¹²) watts

Thermal - of, about, or caused by heat or temperature

Thermodynamics – the study of thermal energy as it moves from one substance to another

Thrust – a force pushing an object forward

Time study – used to establish standard times used with a motion study, a technique for improving work methods

Timeline - a schedule or timetable

Tolerance – the difference between the maximum and minimum dimensions allowed within the design of a product

Tool – a device that is used by humans to complete a task

Torque – a turning or twisting force creates rotation or torsion

Torsion – the twisting of a material

Transistor – electrical device used to amplify or change electronic signals

Transmit – to send or convey a coded or non-coded message from

a source to a destination

Transportation engineer - a person who applies technology and scientific principles to the planning, functional design, operation and management of facilities for any mode of transportation

Triangle – a polygon with three sides and three angles adding up to 180 degrees

Troubleshoot – to locate and find the cause of problems related to technological products or systems

Truss – members or beams assembled together to create a more rigid structure

U

Utilities — service systems to a building such as electricity, gas, water, cable, and telephone

V

Validate -confirmation that a product or service meets the needs of its users

Variance – a change or slight difference in condition, amount or level; also known as variation

Velocity - the speed of something in a given direction

Vise - a mechanical apparatus used to secure an object to allow work to be performed on it

Voltage – the electromotive force in a circuit

Volume – the amount of space occupied by a three-dimensional object as measured in cubic inches

W

Watt - a derived unit of power in the International System of Units (SI)

Wavelength - the distance over which a waves shape repeats

Wedge – a simple machine with a thick end that tapers to a thin edge; usually driven between two objects or parts of an object to secure or separate them

Weight – a force acting on an objects mass due to gravity

Wheel and axle – a simple machine that rotates in a circle around a center point to lift or move an object

Word processing - a computer software application that allows a user to compose, edit, format, and sometimes print of any sort of written material

Work —the amount of force required to move an object a set distance; the transfer of energy from one physical system to another