Branches of Physics

Acoustics: The study of mechanical waves (including sound, ultrasound and infrasound) in gases, liquids, and solids.

Aerodynamics: The study of the dynamics of gases, esp of the forces acting on a body passing through air.

Agrophysics: The science that studies physical processes and properties affecting plant production.

Astronomy: The branch of science which deals with celestial objects(including the planets, stars, galaxies), deep space, and the physical universe as a whole.

Astrophysics: The Study of the physics of the universe, including the physical properties (luminosity, density, temperature and chemical composition) of astronomi cal objects such as stars, galaxies, and the interstellar medium.

Atomic physics: The Study of the structure, properties, and behavior of the atom.

Biophysics: The physics of biological processes. Applies the methods of physics to the study of living things and life processes.

Chemical Physics: The study of physics in chemical systems. Chemical physics focuses on using physics to understand complex phenomena at a variety of scales from the molecule to a biological system.

Classical Physics: Refers to physics not involving quantum mechanics or the theory of relativity; includes Classical Mechanics and Classical Field Theory.

Condensed-matter physics: The study of the physical properties of solids, such as electrical, dielectric, elastic, and thermal properties, and their understanding in terms of fundamental physical laws.

Computational Physics: The application of numerical methods to solve physical problems.

Cosmology: The study of the universe as a whole; of the contents, structure, and evolution of the universe from the beginning of time to the future.

Cryogenics: The study of extremely low temperatures.

Crystallography: The study of crystals and crystalline structures.

Dynamics: The branch of mechanics concerned with the forces that change or produce the motions of bodies

Electrodynamics: The branch of physics that analyses the relationship between electrical and magnetic forces.

Electromagnetism: The study of electrical and magnetic fields, which are two aspects of the same phenomenon.

Electronics: branch of physics that deals with the emission, behaviour, and effects of electrons and with the development, behaviour, and applications of electronic devices and circuits.

Electrostatics: the branch of physics concerned with electric charges at rest and the electro static fields they produce.

Fluid Mechanics: The branch of physics concerned with the mechanics of fluids (liquids, gases, and plasmas) and the forces on them.

Fluid Dynamics: the study of the behaviour of fluids when they're in motion.

Geophysics: the study of the physical characteristics and properties of the earth; including geodesy, seismology, meteorology, oceanography, atmospheric electricity, terrestrial magnetism, and tidal phenomena.

Gravitation: Study of gravitational attraction between bodies and its consequences.

High energy physics: Branch of physics that studies the nature of the particles that constitute matter and radiation at the most fundamental level. High energy\Particle physics usually investigates the irreducibly smallest detectable particles and the fundamental interactions necessary to explain their behaviour.

Kinematics: the branch of mechanics that describes the motion of objects without refer ence to the forces which cause the motion.

Kinetics: the branch of mechanics, including both dynamics and kinematics, concerned with the study of bodies in motion

Kinetic theory of gases: the study of the microscopic behavior of molecules and the interactions which lead to macroscopic relationships like the ideal gas law.

Laser Physics: The study of the physical properties of lasers.

Magnetics: the branch of physics concerned with magnetism.

Magnetostatics: the study of steady-state magnetic fields.

Material science: the study of the properties of solid materials and how those properties are determined by a material's composition and structure.

Mathematical physics: the study of mathematical systems that model physical phenomena.

Mechanics: deals with the behavior of objects and systems in response to various forces.

Meteorology / Weather Physics: The physics of the weather.

Modern physics: physics based on relativity and quantum mechanics

Molecular physics: examines the structure, properties, and behavior of molecules.

Nonlinear dynamics/Chaos theory: The study of systems with a strong sensitivity to initial condi tions, so a slight change at the beginning quickly become major changes.

Nuclear physics: study of the structure and properties of the atomic nucleus, and nuclear reactions and their applications.

Optics: the study of the nature and behavior of light.

Particle physics: analyses the behavior and properties of elementary particles.

Photonics: the science and technology of generating, controlling, and detecting photons, which are particles of light.

Plasma physics: the study of highly ionized gases- that is, gases that have been separated into positively and negatively charged particles.

Pneumatics: the branch of physics concerned with the mechanical properties of compressed gases.

Quantum Mechanics: The study of physical systems at the microscopic level where the smallest discrete values, or quanta, of matter and energy become relevant.

Quantum chromodynamics (QCD): the theory that describes the action of the strong force

Quantum Electrodynamics: The study of how electrons and photons interact at the quantum me chanical level.

Quantum Field Theory: The application of quantum physics to fields, including the fundamental forces of the universe.

Relativistic mechanics: The study of systems described by Einstein's theory of relativity, which generally involves moving at speeds very close to the speed of light.

Rheology: the study of the flow of matter, primarily in a liquid or gas state, but also as "soft solids".

Solar physics: the study of the fundamental processes occurring in the sun. Primarily this is related to the dynamics of plasmas and their interplay with the sun’s magnetic fields.

Solid-state physics/condensed-matter physics: examines the physical properties of solid materials.

Statics: the branch of mechanics concerned with the forces that produce a state of equilibrium in a system of bodies

Statistical Mechanics: The discipline that attempts to relate the properties of macroscopic systems to their atomic and molecular constituents.

Space physics: the study of the natural phenomenon that occur in our solar system. Specifi cally, the sun, the particles and radiation it creates and how these affect the planets. This includes the solar wind and its interaction with the Earth and near-Earth space.

Spectroscopy: the science and practice of using spectrometers and spectroscopes and of analysing spectra,The techniques are widely used in studies of the properties of atoms, molecules, ions, etc

Thermodynamics: the study of heat and other forms of energy, and of the conversion of energy from one form to another.

Thermometry: the branch of physics concerned with the measurement of temperature and the design and use of thermometers and pyrometers

Thermal physics: Thermal physics is the combined study of thermodynamics, statistical me chanics, and kinetic theory of gases. It deals with the study of heat, tempera ture and heat transfer

Ultrasonics: the branch of physics concerned with ultrasonic waves