

Engineering Classification in Lao PDR

There are a number of Engineering Classifications:

1. Civil engineering
2. Electrical engineering
3. Mining engineering
4. Mechanical engineering
5. Industrial engineering, etc.

Civil Engineering is dealing with the design, construction and maintenance of public works such as roads, bridges, tunnels, canals, dams, airports, sewerage systems, pipelines and railways. Its Disciplines include: Transport Engineering, Structural Engineering, Construction Engineering, Surveying Engineering, Geotechnical Engineering, Environmental Engineering, Hydraulic and Water resources Engineering.

SUB-DISCIPLINES OF CIVIL ENGINEERING	
1	Transport Engineering: Application of scientific Approach (planning, design, operation and management) to Transportation System such as: Roads, Railway, Sea/River and Air Transport, it involves planning, design, construction/operation and maintenance of Transportation Facility.
2	Structural Engineering is related to the Assemblage of two or more basic elements such as Beam, Slab, column, Truss, Frame, Shells etc. Analyse and Design a Structure that will safely bear the estimated Loads along with Economy but Safety and good Serviceability, it includes the repair, rehabilitation and maintenance Works.
3	Construction Engineering is dealing with Planning, Scheduling and Execution of Construction Activities. This comprises of Men, Materials, Times and Money Management on the new Construction Practice by Using of appropriate and local Technology and Taking into account of Men and Material Safety, Utilization of marginal Materials.
4	Surveying Engineering is to determine the positions of points on, above or below the Surface of the Earth by means of direct or indirect Measurements of

	Distances, Elevations and Directions. Activity involved in collection of topographic Features of a Location for future Construction. Surveying has advanced from chain surveying to remote Sensing with the Advent of various electronic sophisticated Instruments.
5	Geotechnical Engineering is concerned with Soil investigation-Properties, bearing Capacity, ground improvement Techniques, which Involves in the design of Foundations, Slopes, Retaining Structures, Highway pavement Design, Embankments and earth Dams, Tunnels, underground Structures and deep Cuts.
6	Environmental Engineering: Work towards achieving a healthy Environment. To provide healthy Water, Air and Land for human Habitation and for other Organisms, and to clean up the Pollution Sites including the Waste Treatment and disposal Systems.
7	Hydraulic and Water resources engineering: Hydraulic deals with Mechanics of Water (Fluid) Flow. Water Resource Engineering Identifications and Utilization of Available Water Resources minimizing the Loss (ground water utilization, ground water recharge and rain water harvesting). Water Management involves the use of hydrologic and hydraulic Drainage Systems, Detention/Retention Ponds, navigational Waterways and Flood control Levees, Dams and Lakes.