

1.1 Civil Engineering

Civil Engineering is the field of engineering concerned with planning, design and construction for environmental control, development of natural resources, buildings, transportation facilities and other structures required for health, welfare, safety, employment and pleasure of mankind.

The main scope of civil engineering or the task of civil engineering is planning, designing, estimating, supervising construction, execution, and maintenance of structures like building, roads, bridges, dams, etc. Population demographics along with increasing urbanization have facilitated the need for sustainable and efficient infrastructure solutions. Development in green buildings, sensor-embedded roads and buildings, geopolymer concrete, and water management will stimulate global civil engineering industry growth.

1.1.1 Field of civil engineering

Civil engineering is a wide field and includes many types of structures such as residential buildings, public buildings, industrial buildings, roads, bridges, tunnels, railways, dams, canal and canal structures, airports, harbours, ports, water treatment plants, waste water treatment plants, water supply networks, and drainage networks. It also covers environmental protection, irrigation and water resources, soil investigations and foundations, transport systems management, etc.

1.1.2 Specialized disciplines in civil engineering

Civil engineering may be divided into the following fields:

- Building materials
- Building construction
- Structural engineering
- Geotechnical engineering
- Hydraulics, water resources and irrigation engineering
- Water supply and sanitary engineering
- Environmental engineering
- Transportation engineering
- Town planning and architecture
- Surveying
- Drawing
- Estimation and specification
- Management techniques
- Computer application