

Unit - 1 Introduction & infrastructure of civil

* Introduction

Civil engg is one of the oldest & most fundamental branch of engineering. It deals with the design, construction & maintenance of physical & natural built environment. It includes infrastructure project such as roads, bridges, dams, ~~etc.~~ airport, building & water supply system.

It plays a crucial role in shaping the modern world, improving the quality of life, ensuring the safe & sustainable devp.

* Scope & specialization broad scope, covering a wide range of activities & specialized fields

- Structural engg - Design & analysis of building, bridges, tower, other structures to ensure they can withstand loads & environmental condition.
- Geotechnical engg - Study of soil, rock mechanics to design foundation, retaining walls, tunnels.
- Transportation engg - Planning & design of transportation system such as highways, railways, airport & ports.
- Environmental engg - Waste management, water & air pollution control & sustainable development practices.

- Water resources engg - Management of water through dams, canals, drainage system, flood control.
- Construction engg - Project planning, scheduling, cost elimination & management.
- Urban & regional Planning - Design & planning of land use in urban area for efficient devt. & infrastructure.

- * Role of civil engg. play vital role in devt. & well being of society.
- Ensuring safe & efficient infrastructure like roads, bridges, building, public spaces.
 - Contributing to public health & safety through clean water systems & waste management.
 - Supporting economic development by facilitating transportation & connectivity.
 - Promoting sustainability by incorporating eco-friendly & energy-efficient practices in construction.
 - Responding to natural disasters by designing resilient structures & recovery plans.
 - Improving the quality of life through smart city planning & modern infrastructure.

* Impact of Infrastructural Devp. on economy.

It is back bone of economic growth.

- Job creation - Infrastructure projects create employment opportunities in both skilled & unskilled sectors.
- Economic Activity Boost - Road, ports & railways improve trade & movement of goods & people.
- Attracting Investments - Quality infrastructure attracts both domestic & foreign investment.
- Rural Devp - Improve accessibility & devp. in remote areas, by reducing urban-rural disparity.
- Productivity & Efficiency - Enhance industrial & commercial productivity through better logistics & utilities.
- Increased property value - Modern infrastructure leads to appreciation in land & property value.