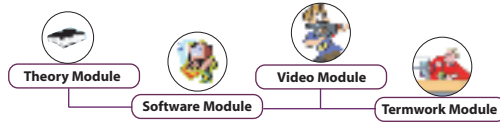


# Transportation Engineering



System Requirement:- IBM-PC Compatible with Window-OS, 128 MB RAM/Multimedia Kit

## Theory module

**Features :** Theory, Figures, Photographs, Animations with controller, Highlighter tool, Note creation facility, Systematic page navigation, Printing facility, Access to numerical modules, Access to Videos at appropriate locations.

## List of Topics

### Road Engineering



- ✍ Introduction
- ✍ Geometric Design of Roads
- ✍ Road Material & Construction
- ✍ See the factors controlling the road alignment
- ✍ Analyse Overtaking Sight Distance through animation
- ✍ Observe Overtaking and Skidding effect in animation
- ✍ Study the various cross drainage works
- ✍ Learn Failures in flexible pavements, Defects in Concrete roads

### Bridge Engineering

- ✍ Explore the bridge classification
- ✍ View in animation, how the Swing bridge works
- ✍ See the working of Bascule bridge, Transverse bridge
- ✍ Observe how the Transporter bridge & Lift bridge works
- ✍ Learn the importance of causeway

- ✍ Types of Bridges & Component Part
- ✍ Inspection & Maintenance



### Railway Engineering



- ✍ Component Parts of Railway
- ✍ Geometric Design
- ✍ Station & Yards
- ✍ Study failures of rails, Learn wearing of rails through animations
- ✍ View the various sleepers, fixtures and fasteners
- ✍ Observe coning of wheels, superelevation provision
- ✍ View percussion theory of creep in animation
- ✍ Learn about the station & yards, view turn-table

### Tunnel Engineering

- ✍ Tunneling
- ✍ Construction of Tunnels
- ✍ View in animation how the centerline is marked for different methods
- ✍ Observe in animation the Heading & Benching method
- ✍ See the centre drift & side drift methods for tunnel construction



## Docks & Harbour



- ✍ Introduction
- ✍ Elements of Harbour
- ✍ Port Facilities

- ✍ View the operation of dry dock
- ✍ See how floating dock works
- ✍ Study Breakwaters, Moorings, Fenders etc.
- ✍ Observe working of lock-basin works

## Airport Engineering

- ✍ Planning & Layout
- ✍ Terminal Area & Airport Layout
- ✍ Taxiway Design
- ✍ Visual Aids, Heliports
- ✍ Airport Pavement

- ✍ Study airport layout and Runway marking
- ✍ View Airport lighting in 3D animation
- ✍ See Forces on aeroplane while landing and take-off
- ✍ View parking requirements, apron, taxiways



## Software Module

**Road Engineering :** Stopping Sight Distance and Overtaking Sight Distance Calculations, Superelevation and Extrawinding Calculations, Transition Curve, Summit Curve and Valley Curve Calculations, CBR Test and Group, Index Calculations, surface Drainage Calculations.....

**Railway Engineering :** Geometric Design Calculations for Ruling gradient, Negative superelevation, Weighed average, Permissible speed, Gauge widening, Transition and Valley Curve Calculations, Turnout and Crossover Calculations, Material Quantity Calculations, Tractive Resistance Calculations for Maximum train load and Steepest gradient.....

## Video Module

Videos on Extra widening of Road, Pin-hair bend, various bridges and support bearings, Track gauges, Rail cross-section, Slipping of wheels, Failures of Rails, Types of sleepers, Fish plates, Spikes, Bolts, Chairs, Keys, Clips, Points and Crossings, Split turnout, Turn table, Tunnel etc.



## Teamwork Module

Contains assignments on various topics covering Subjective questions, Objective questions, Random selection of Objective type questions, Numerical assignments, Video assignments, Drawing assignments.