

Course code: Course Title	Course Structure			Pre-Requisite
<b>CE101: Basic Civil Engineering</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>NIL</b>
	<b>3</b>	<b>1</b>	<b>0</b>	

**Course Objective:** To familiarize the students with the concepts of Civil Engineering and related applications.

S. NO	Course Outcomes (CO)
<b>CO1</b>	Describe about the basics of surveying, building construction and materials.
<b>CO2</b>	Describe the basic concepts of engineering mechanics.
<b>CO3</b>	Comprehend the idea about the different types of loadings and soil mechanics.
<b>CO4</b>	Relate water resources and environmental engineering in the real world scenario.
<b>CO5</b>	Apply ideas about the transportation engineering.

S. NO	Contents	Contact Hours
<b>UNIT 1</b>	Introduction and Scope of Civil Engineering, Principles & Types of Surveying, linear and angular measurements, levelling, Electronic surveying instruments etc., Components of Buildings & their functions. Types of buildings, Plinth area, carpet area, floor space index.	<b>8</b>
<b>UNIT 2</b>	Law of friction, angle of friction, angle of repose, law of machines, Mechanical advantage, and velocity ratio. Centre of gravity, Moment of inertia, polar moment of inertia, radius of gyration and moment of inertia of composite sections.	<b>8</b>
<b>UNIT 3</b>	Types of structures, Design Loads acting on the structure, Introduction to foundation, retaining wall and slopes. Shear and settlement criteria, allowable bearing capacity, Classification of soil.	<b>8</b>
<b>UNIT 4</b>	Introduction to Dam and Reservoirs, Design concepts of surface and sub drainage system, Water conservation, Quality of sources and their treatment requirement, basics of water supply systems, Chemical and Microbiological quality parameters, Drinking water quality criteria and standards.	<b>8</b>

<b>UNIT 5</b>	Classification of highways, Classification of pavements, Fundamentals of traffic flow and transportation planning, Elements of Traffic Engineering and Traffic Control, Intelligent Transport Systems.	<b>8</b>
	<b>TOTAL</b>	<b>40</b>

<b>REFERENCES</b>		
<b>S.No.</b>	<b>Name of Books/Authors/Publishers</b>	<b>Year of Publication / Reprint</b>
<b>1</b>	Basic Civil Engineering, B.C. Punmia, Laxmi Publications ISBN-13:9788170084037	2003
<b>2</b>	Basic Applied Soil Mechanics, Gopal Ranjan and A S R Rao, New Age International(P) Limited Publishers ISBN-81-224-1223-8	2005
<b>3</b>	Water Supply Engineering (Environmental Engineering), S.K. Garg, Khanna Publishers ISBN: 9788174091208	2010
<b>4</b>	Hydrology and Water Resource Engineering. K.C. Patra, Narosa Publishing House (ISBN 0-07-06472-59-8)	2002
<b>5</b>	Introduction to Transportation Engineering by James H. Banks, Tata Mc-Graw Hill, New Delhi ISBN-13:978-0-07-070246-2	2010
<b>6</b>	Strength of Materials by S S Rattan , McGraw Hill, ISBN: 978-9385965517	2017
<b>7</b>	Engineering Mechanics, S Timoshenko, J V Rao, Sukumar Patil, Tata Mc-Graw Hill, New Delhi ISBN-13:978-1259062667	2017