Year & Sem:	Course Code: CE4503	Course Name: **Pavement Analysis and Design**	No. of Credits: 4	L	T&PS	P
				2	2	0

UNIT-I :Types of Pavements

Types of pavement – Factors affecting design of pavements – wheel loads –ESWL Concept- tyre pressure – contact pressure, Material characteristics – Environmental and other factors.

UNIT- II: Stresses in Flexible Pavements

Stresses in flexible pavement – layered systems concept – one layer system – Business Two layer system – Burmister Theory for Pavement Design.

UNIT-III:Stresses in Rigid Pavements

Stresses in rigid pavements – relative stiffness of slab, modulus of sub-grade reaction, Westergaard's stresses due to warping, stresses due to loads, stresses due to friction.

UNIT- IV: Flexible Pavement Design

Pavement design: CBR Method of Flexible Pavement Design- IRC method of flexible pavement design, AASHTO Method of Flexible Pavement design, IRC:58-2002, IRC:58-2015.

UNIT V: Rigid Pavement Design

IRC method of Rigid pavement design – Importance of Joints in Rigid Pavements- Types of Joints – Use of Tie Bars and Dowell Bars. AASHTO method of Rigid pavement design.

UNIT VI: Highway Maintenance

Need for Highway Maintenance- Pavement Failures- Failures in Flexible Pavements-Types and Causes-Rigid Pavement Failures- Types and causes- Pavement Evaluation- Falling weight Deflectometer, Benkleman Beam method- Strengthening of Existing Pavements- Overlays.

References/Text Books:

1. Yoder and Wit Zork, Principles of Pavement Design.
2. Dr. L.R. Kadiyali, Traffic Engineering and Transportation Planning, Khannan Publishers, 7 th Edition, 2007.
3. C. JotinKhinsty and B. Kent Lall, Transportation Engineering

Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations.

Video Lectures (Web Links):

1. http://www.nptelvideos.in/2012/11/introduction-to-transportation.html (Lecture 24 to Lecture 40)