

Course No	CE 225006
Course Title	Pavement Design and Evaluation
Credits	: L T P C 3 0 0 3
Prerequisites	Transportation Engineering
Instructor(s):	
<p>Course contents:</p> <p><b>Introduction to Pavement Design:</b> Definition: Pavement, Desirable Characteristics Of Pavement, Pavement Types – Flexible and Rigid, Pavement Courses and its Function, Comparison: Flexible and Rigid Pavement, Comparison: Highway and Runway Pavements, Factors affecting pavement design, Pavement materials.</p> <p><b>Stresses and strains in Flexible Pavements:</b> Layered System Concepts, One-layer, Two-layer, Three-layer system.</p> <p><b>Design of Flexible Pavements:</b> Design of flexible pavements as per IRC 37 and other methods for stabilized and un-stabilized base and subgrade layers.</p> <p><b>Stresses and Deflections in Rigid Pavements:</b> Stresses due to loading, Stresses due to temperature changes (Curling), Stresses due to friction, Stresses due to reinforcement, Design of Joints.</p> <p><b>Design of Rigid Pavements:</b> Design of rigid pavements as per IRC 58 for stabilized and un-stabilized base and subgrade layers.</p> <p><b>Pavement Evaluation:</b> Pavement Distresses, Strengthening of Existing Pavement, Design of Overlays</p>	
<p>References Books/Manuals:</p> <ol style="list-style-type: none"> <li>1. <b>Y.H. Huang.</b> Pavement Analysis and Design, 2nd Edition, 2004, Pearson Prentice Hall, USA</li> <li>2. <b>E.J. Yoder &amp; M.W. Witczak.</b> Principles of Pavement Design, 2<sup>nd</sup> Edition, 2011, John Wiley &amp; Sons.</li> <li>3. <b>Dr. L.R. Kadiyali &amp; Dr. N.B. Lal.</b> Principles and Practices of Highway Engineering, 6<sup>th</sup> Edition 2013, Khanna Publishers, New Delhi.</li> <li>4. <b>MORT&amp;H-</b> Specifications for Roads and Bridges, 5th Revision, 2013.</li> <li>5. <b>IRC: 37-2012.</b> Tentative Guidelines for the Design of Flexible Pavements, Indian Road Congress, Delhi.</li> <li>6. <b>IRC: 58-2011.</b> Tentative Guidelines for the Design of Rigid Pavements, Indian Road Congress, Delhi.</li> <li>7. <b>IRC: 81-2012.</b> Guidelines for Strengthening of Flexible Road Pavements Using Benkelman Beam Deflection Technique, Indian Road Congress, Delhi</li> <li>8. <b>IRC: SP: 76-2008.</b> Tentative Guidelines for Conventional, Thin and Ultra-Thin White-topping, Indian Road Congress, Delhi.</li> </ol>	