

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI

PROFORMA FOR NEW COURSE

1.	Title of the Course	Pavement Analysis and Design
2.	Course Number	CE5117
3.	Status of the Course	Elective
4.	Structure of Credits	3-0-0-3
5.	Offered to	PG
6.	New Course/ Modification to	New Course
7.	To be offered by	Dr. B. Krishna Prapoorna
8.	To take effect from	July 2018
9.	Prerequisite	CoT
10.	Whether approved by the Program	Yes
11.	Course Objective (Max 70 words): This course presents techniques and methodologies to analyze and design flexible and rigid pavements. The course is designed to provide engineering students exposure to pavement materials and characterization, evaluation of performance, and the many elements of pavement design. Specifically, the students will develop a working knowledge of flexible and rigid pavement analyses in order to understand pavement design practices that are used globally.	
12.	Course Content (Max 100 words): The course will cover the following: Pavement Design Principles; Traffic Loads, Materials, Performance Tests, & Parametric Relationships; Flexible Pavement Analysis; Flexible Pavement Design – AASHTO, IRC, and Pavement Design ME (MEPDG); Rigid Pavement Analysis; Rigid Pavement Design – PCA / AASHTO, IRC, and Pavement Design ME (MEPDG); Design Software: MEPDG, KenLayer, KenPave, JULEA, & BISAR; Overlay Design.	
13.	Text Book(s): 1. Huang, Y. H. Pavement Analysis and Design, 2 nd Edition, Pearson Prentice Hall, NJ, USA, 2010. 2. Yoder, E. J., and Witczak, M. W. Principles of Pavement Design, 2 nd Edition, Wiley, NY, USA, 1975.	
14.	Reference(s): 1. Mamlouk, M. S., and Zaniewski, J. P. Materials for Civil and Construction Engineers, Pearson Prentice Hall, USA, 2010. 2. Hot-Mix Asphalt Paving Handbook 2000, National Asphalt Pavement Association and US Army Corps of Engineers, 2000. 3. Roberts, F. L., Kandhal, P. S., Brown, E. R., Lee, D. Y., and Kennedy, T. W. Hot Mix Asphalt Materials, Mixture Design, and Construction, National Asphalt Pavement Association Education Foundation, MD, USA, 2 nd Edition, 1996. 4. Concrete Pavement Design and Construction Practices, State of the Art Technical Digest, FHWA Task Order DTFH61-98-T07007, Applied Pavement Technology, Inc., Urbana, IL, USA, May 1999.	