

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	Signals and Systems
2.	Course Number	EE2103
3.	Status of the Course	Core
4.	Structure of Credits	3-1-0-4
5.	Offered To	UG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Electrical Engineering
8.	To take effect from	July 2018
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective: To introduce various mathematical tools necessary for the analysis and characterizations of signals and systems.	
12.	Course Content: Introduction: classification of signals and systems, elementary operations on the signals, basic properties of systems such as causality and linearity; Linear time-invariant systems: continuous-time linear time-invariant (LTI) system, discrete-time LTI system, properties of LTI systems, system representation through linear constant coefficient differential and difference equations; Fourier series: representation of continuous-time periodic signals, convergence and properties of the Fourier series, frequency response of LTI systems; Fourier transform: representation of aperiodic signals, properties of the continuous-time Fourier transform; Laplace transform: introduction to Laplace transform and region of convergence, properties of the Laplace transform, inverse Laplace transform, analysis of LTI systems using Laplace transform, the unilateral Laplace transform; Sampling theorem and its implications.	
13.	Text book(s): 1. Oppenheim A V, Willsky A S and Nawab S H, <i>Signals and Systems</i> , Prentice Hall (2003).	
14.	Reference(s): 1. Haykin S and Veen B V, <i>Signals and Systems</i> , Wiley (2007). 2. Lathi B P, <i>Principles of Linear Systems and Signals</i> , Oxford University Press (2009).	