

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	Data Science for Software Engineering
2.	Course Number	CS5024
3.	Status of the Course	Elective
4.	Structure of Credits	3-0-0-3
5.	Offered To	PG
6.	New Course/Modification to	New
7.	To be Offered by	Dr. Sridhar Chimalakonda
8.	To take effect from	January 2019
9.	Prerequisite	CoT
10.	Whether approved by the Department	Yes
11.	Course Objective: To provide an exposure on emerging trends in the area of data science for software engineering with a focus on application of data science and mining methods to analyze open source software repositories and further develop tools.	
12.	Course Content: Refresher of data science and data mining methods - Current state of confluence of software engineering and artificial intelligence - Data sources in software engineering - Software data analytics (analysis of various artifacts such as architecture, code, bugs) - Visual analytics for software engineering data - Software reuse and software evolution - Software reverse engineering and reengineering - Analysis of mobile and game software development data - Prediction of software qualities through analysis of software repositories.	
13.	Text book(s): 1. Christian Bird, Tim Menzies, and Thomas Zimmermann, <i>The Art and Science of Analyzing Software Data</i> , Morgan Kaufmann, (2015). 2. Tim Menzies, Laurie Williams, and Thomas Zimmermann, <i>Perspectives on Data Science for Software Engineering</i> , Morgan Kaufmann, (2016).	
14.	Reference(s): 1. Ruchika Malhotra, <i>Empirical Research in Software Engineering: Concepts, Analysis, and Applications</i> , Chapman and Hall/CRC , (2015).	