INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	Database Systems
2.	Course Number	CS3206
3.	Status of the Course	Core
4.	Structure of Credits	3-0-2-4
5.	Offered To	UG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Computer Science and Engineering
8.	To take effect from	July 2018
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	**Course Objective:** To impart theoretical and practical concepts in database systems including data representation, modeling, storage and retrieval mechanisms; To impart hands-on experience on usage of state of the art database frameworks, applications and their design aspects.	
12.	**Course Content:** Data modeling methodologies including ER diagrams, relational models, relational algebra, tuple relational calculus, integrity constraints and views; Schema representation and normalization including functional dependencies and 1NF to 5NF; Hands on using SQL scripting over standard workbenches; External data storage mechanisms including indexing, hashing and B/B+ trees; Transaction processing and concurrency control algorithms; Introduction to and hands-on with distributed database systems including NOSQL systems; Basics of DBMS security such as SQL injection.	
13.	Text book(s): 1. Ramez E and Shamkant B N, *Fundamentals of Database Systems,* 7th Edition, Pearson (2015). 2. Avi S, Henry F K and Sudarshan S., *Database System Concepts,* 6th Edition, McGraw Hill Education (2013).	
14.	Reference(s): 1. Edward C, Wampler D and Rutherglen J, *Programming Hive: Data Warehouse and Query Language for Hadoop,* 1st Edition, Shroff (2012). 2. White T, *Hadoop: The Definitive Guide,* 3rd Edition, O'Reilly (2012).	