

**INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE**

1.	Title of the Course	Object Oriented Analysis and Design
2.	Course Number	CS3900
3.	Status of the Course	Core
4.	Structure of Credits	3-0-0-3
5.	Offered to	UG
6.	New Course/ Modification to	New course
7.	To be offered by	CS Faculty
8.	To take effect from	Jan 2018
9.	Prerequisite	---
10.	Whether approved by the Program	Yes
11.	Course Objective: (Max 70 words) Learn and apply the principles of object-oriented modeling, analysis, and design to model and develop reasonably complex software systems.	
12.	Course Content: (Max 100 words) Introduction to object-oriented programming languages and models. Concepts of objects and classes, messages and interfaces, inheritance, encapsulation, and polymorphism. Object-oriented design and implementation in a programming language. Overview of object-oriented modeling through Unified Modeling Language (UML) - Structural diagrams, Behavioural diagrams such as use case modeling, class diagrams and sequence diagrams. Introduce concepts of interaction, collaboration diagrams, activity diagrams, state diagrams. Overview of design-by-contract, separation of principles and different categories of design patterns - creational, structural and behavioural patterns.	
13.	Text Book: 1. Grady B., <i>Object-Oriented Analysis and Design with Applications</i> , Third edition, Addison-Wesley Professional, 2007. 2. Craig L., <i>Applying UML and Patterns : An Introduction to Object-Oriented Analysis and Design and Iterative Development</i> . Third edition, Prentice Hall, 2015.	
14.	References: 1. Gamma E., Richard H., Ralph J., John V., <i>Design Patterns: Elements of Reusable Object-Oriented Software</i> , Addison-Wesley, 1994. 2. Predita S., <i>Using UML: Software Engineering with Objects and Components</i> . Addison-Wesley, 2000. 3. Cay H., <i>Big Java: Late Objects</i> . John Wiley, 2012.	