

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	Programming Methodology
2.	Course Number	CS2105
3.	Status of the Course	Core
4.	Structure of Credits	2-0-3-4
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 understand the principles, design and evolution of multiple programming languages across various paradigms; To apply these principles for developing solutions to programming problems.	
12.	Course Content: History and evolution of programming languages; Introduction to different programming paradigms: imperative, object oriented, functional, logic, parallel programming; Syntax and semantics; Concepts in programming languages: scope, binding, data types, expressions, subprograms; Programming language design trade-offs; Object-oriented design concepts: abstraction, decomposition, encapsulation, inheritance, polymorphism; Design patterns; Programming languages and tools: development tools, debugging tools; Version control.	
13.	Text book(s): 1. Lopes C V, <i>Exercises in Programming Style</i> , Chapman and Hall/CRC (2014). 2. Sebesta R W, <i>Concepts of Programming Languages</i> , Pearson Education (2015).	
14.	Reference(s): 1. Felleisen M, Findler R B, Flatt M and Krishnamurthi S, <i>How to Design Programs</i> , MIT Press (2014). 2. Friedman D P, Wand M and Haynes C T, <i>Essentials of Programming Languages</i> , MIT Press (2008). 3. Scott M L, <i>Programming Language Pragmatics</i> , Morgan Kaufmann (2009). 4. Sethi R, <i>Programming Languages: Concepts and Constructs</i> , Addison-Wesley (2006).	