DISCRETE MATHEMATICS

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TYPE OF COURSE   : New | Core | UG
COURSE DURATION   : 12 weeks (29 Jul'19 - 18 Oct'19)
EXAM DATE   :17 Nov 2019

INTENDED AUDIENCE : UG students interested in computer science, combinatorics, etc.

COURSE OUTLINE :
Discrete Mathematics is the study of discrete objects as opposed to continuous objects like real numbers. The discrete objects like proofs, sets, graphs, color-ings, algebraic structures, algorithms etc arise naturally and frequently in many areas of mathematics and computer science and are funda-mental in an undergraduate curriculum of Computer Science and Mathematics. In this course, we will focus on Logic, Set Theory, Number Theory, Algebraic Structures, Combinatorics and Graph Theory.

ABOUT INSTRUCTOR :
Prof. Sajith Gopalan [PhD (IIT Kanpur, 1998), MTech (IIT Kanpur, 1993), BTech (REC Calicut, 1991)] has been in the faculty of Computer Science and Engineering at IIT Guwahati since 1997. Research interests: Algorithms, Parallel Computing, Complexity Theory, Game Theory

Prof. Benny George is working an Assistant Professor in the Department of Computer Science and Engineering at the Indian Institute of Technology Guwahati. His research interests are mainly in combinatorics of words. He is also interested in theoretical aspects of computer science.

COURSE PLAN :

 Week 1**:** Mathematical Logic

 Week 2**:** Mathematical Logic (contd)

 Week 3**:** Set Theory

 Week 4**:** Set Theory,Number Theory

 Week 5**:** Number Theory

 Week 6**:** Algebraic Structures

 Week 7**:** Algebraic Structures (contd)

 Week 8**:** Recurrences

 Week 9**:** Recurrences,Combinatorics

 Week 10**:** Combinatorics,Graph Theory

 Week 11**:** Graph Theory

 Week 12**:** Graph Theory (contd)