

MARIS STELLA COLLEGE, VIJAYAWADA

(An Autonomous College affiliated to Krishna University)

COURSE TITLE: GRAPH THEORY
COURSE CODE: MATHC042

SEMESTER: VI

SYLLABUS

Course Outcomes:

CO1. Familiarize with Graph theory and its applications.

CO2. Improve in logical thinking..

UNIT-I: Graphs and Subgraphs (12 hours)

Graphs, Definition and examples, Degrees, Subgraphs, Graph isomorphism, Matrices: The incidence and adjacency matrices.

2.0, 2.1 – 2.4, 2.8.

UNIT-II: Connectedness (12 hours)

Walks, Trails and Paths, Connectedness and Components, Blocks, Connectivity.

4.0, 4.1 – 4.4.

UNIT-III: Eulerian & Hamiltonian Graphs (12 hours)

Eulerian graphs, Hamiltonian graphs, closure of a graph, Petersen graph.

5.0, 5.1 – 5.2.

UNIT-IV: Trees (12 hours)

Trees, Characterization of trees, Centre of a tree.

6.0, 6.1 – 6.2.

UNIT-V: Directed Graphs (12 hours)

Definitions and basic properties, Paths and Connections, Digraphs and Matrices, Tournaments.

10.0, 10.1 – 10.4.

Prescribed Text Book:

Invitation to Graph Theory, S.Arumugam & S.Ramachandran, Scitech Publications, April 2015.

Reference books:

Graph Theory with applications to Engineering and Computer Science, Narsingh Deo, Printice-Hall India.