

# 19ECS774: SOCIAL NETWORK ANALYSIS

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## **Unit I**

**8L**

Networks and Relations, Relations and Attributes, Analysis of Network Data, Interpretation of Network Data, An Overview. The Development of Social Network Analysis, Sociometric analysis and Graph Theory, Interpersonal Configurations and cliques.

## **Unit II**

**8L**

Analyzing Relational Data, Collecting Relational Data, Selection and Sampling of Relational Data, Preparation of Relational Data, Organizing Relational Data. Lines, Neighbourhoods and Densities, Sociometric and Graph Theory, Density: Ego-centric and Socio-centric, A Digression on absolute density, Community Structure and density

## **Unit III**

**8L**

Centrality Peripherality and Centralization, Centrality: Local and Global, Centralization and Graph Centres, bank Centrality in Corporate Networks, Components, Cores and Cliques, Components, Cycles and Knots, The Contours of components, Cliques and their intersections

## **Unit IV**

**8L**

Positions, sets and clusters, the structural equivalence of points, Clusters: Combining and dividing points, Block Modelling with CONCERT, Towards Regular Structure Equivalence

## **Unit V**

**10L**

Network Dynamics and Change over Time, Modelling change in Network Structure, Testing Explanations. Dimensions and displays, Distance, space and metrics, principal components and factors, Non-metric methods, Advances in Network Visualization, Elites, Communities and influence. Accessing twitter

## **Textbook(s):**

1. John Scott, Social Network Analysis, 3/e, SAGE Publications, 2017
2. Matthew A. Russell, Mining the Social Web, 2/e, O'Reilly Media, 2011.

## **References**

1. Charles Kadushin, Understanding Social Networks: Theories, Concepts, and Findings, Oxford University Press, 2012.
2. Maksim Tsvetovat, Alexander Kouznetsov, Social Network Analysis for Startups, O'Reilly, 2014.