Nirma University
Institute of Technology, School of Technology
M Tech Computer Science and Engineering (Data Science)
Semester – II

L	T	P	C
3	0	2	4

Course Code	3CS42D302
Course Name	Social Media Analytics

Course Learning Outcomes (CLOs):

At the end of the course, students will be able to

1. comprehend the fundamental elements and basic concepts in social media analytics
2. use important metrics and models to characterize and measure networks
3. apply the principle of social media analyzing techniques such as community detection, influence propagation and maximization, link prediction

Syllabus:

Teaching Hours

Unit I **10**

Understanding of Social Media Analytics: Introduction to the social models and its structure, Social media analytics, Types of social data and their characteristics, Entity linking and entity resolution for social data, Social networks as graph and centrality measures

Unit II **15**

Network Models, Measures and Dynamics: Centrality and social theory, Transitivity and reciprocity, Similarity, Real world networks, Small world network, Random networks and preferential attachment model, The Bianconi-Barabási model and measuring fitness, Evolving networks, Degree of correlation, Random walks, Network robustness

Unit III **12**

Social Media Mining: Visualization and exploration of the data, Data and Application Program Interface (API), Community analysis, Information diffusion, Epidemics, Immunization, Measures of importance, Maximization, Influence and Homophily, Link predication

Unit IV **8**

Applications and case studies: Recommendation in social media, Sentiment analysis, Privacy in social networks, Crowd sourcing

Self-Study:

The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents.

Laboratory Work:

Laboratory work will be based on the above syllabus with minimum 5 experiments to be incorporated.

Suggested Readings^:

1. Zafarani, Abbasi, Liu.Social, Media Mining, Cambridge University Press.
2. Liu, Tang., Community Detection and Mining in Social Media, Morgan and Claypool publisher.
3. Newman, Networks: The Introduction. Oxford University press.
4. Marshal Sponder, Social Media Analytics, Tata McGraw-Hill Education.
5. Charu Aggarwal, Social Network Data Analytics, Springer.
6. Albert-László Barabási, Network Science, Cambridge University Press.

L=Lecture, T=Tutorial, P=Practical, C=Credit

^this is not an exhaustive list