PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY
(Autonomous)
Kanuru, Vijayawada-520007
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (Data Science)
IV B Tech – I Semester (Data Science)
Social Media Analytics

Course Code	20DS4702B	Year	IV	Semester	I
Course Category	PEC	Branch	CSE (Data Science)	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	Machine Learning
Continuous Internal Evaluation	30	Semester End Evaluation	70	Total Marks	100

Course Outcomes	
Upon Successful completion of course, the student will be able to	
CO1 Describe social media landscapes, data types, and network models to understand network formation and analysis.	L2
CO2 Apply graph theory metrics and tools to evaluate social networks and extract meaningful insights through network analysis.	L3
CO3 Apply text mining and sentiment analysis to extract opinions and behaviors from unstructured social media data.	L3
CO4 Analyze social influence, user behavior, and campaign effectiveness to evaluate real-world case studies using social media platforms and tools..	L4

Contribution of course outcomes towards achievement of program outcomes & Strength of correlations (3: Substantial,2: Moderate,1: Slight)													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	2												
CO2	3												
CO3	3												
CO4		3									2		

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Unit No	Syllabus Contents	CO
I	**Introduction to social media and Networks:** Social media landscape: data types, sources (public vs. private), Applications of SMA in business and research, social networks, and information networks: basic definitions and examples, Models of network formation, random graphs.	CO1
II	**Network Analysis and Graph Theory:** Key metrics: Degree, Closeness, Betweenness, PageRank, Eigenvector centrality, Community detection: node-centric, group-centric, hierarchical methods, Graph clustering, topology discovery.	CO1, CO2
III	**Text Mining and Sentiment Analysis:** Text preprocessing: tokenization, stemming, TF-IDF, Classification and clustering algorithms for text, Lexicon-based and ML-based sentiment analysis, Slang sentiment, opinion extraction from reviews and posts.	CO1, CO2, CO3
IV	**Influence, Behavior, and Campaign Analytics:** Spread of influence, disease, and information on networks, Influence maximization and viral marketing, Behavior modeling (individual and collective), Campaign analysis: reach, engagement, impressions.	CO1, CO3, CO4
V	**Applications and Case studies:** Facebook, Twitter, LinkedIn, Reddit, Link prediction techniques and evaluation, social listening and recommendation systems.	CO1, CO2, CO3, CO4

Learning Resources
Text Books
1. Social Media Mining – Reza Zafarani, Mohammad Ali Abbasi & Huan Liu, 1st edition, April 28, 2014, Cambridge University Press
2. Social Network Data Analytics – Charu C. Aggarwal (editor), 1st edition, March 17, 2011, Springer
References
1. Mining the Social Web: Analyzing Data from Facebook, Twitter, LinkedIn, and Other Social Media Sites – Matthew A. Russell, 2nd edition, 2013, O'Reilly Media
2. Social Media Metrics: How to Measure and Optimize Your Marketing Investment – Jim Sterne, 1st edition, 2010, Wiley
3. Networks, Crowds, and Markets: Reasoning About a Highly Connected World – David Easley & Jon Kleinberg, 1st edition, 2010, Cambridge University Press
E-Resources
1. https://nptel.ac.in/courses/110107129
2. https://emplifi.io/resources/blog/social-media-analytics-the-complete-guide