Course Code	PAD21D09J	Course Name	SOCIAL MEDIA AND TEXT ANALYTICS	Course Category	D	Discipline Specific Elective	L	T	P	C
							4	0	4	6

Pre-requisite Courses	Nil	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer Applications		Data Book / Codes/Standards	Nil	

Course Learning Rationale (CLR):	*The purpose of learning this course is to:*
CLR-1:	*To leverage the power of the R eco-system to extract, process, analyze, visualize and model social media data*
CLR-2:	*Visualize and analyze data from social media platforms to understand and model complex relationships using various concepts and techniques*
CLR-3:	*Understand the fundamentals of text mining*
CLR-4:	*Utilize text for prediction techniques*
CLR-5:	*Understand the relevance between information retrieval and text mining*
CLR-6:	*Analyze different case studies related to text mining*

Course Learning Outcomes (CLO):	*At the end of this course, learners will be able to:*	**Learning**		
		1	2	3
		Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)
CLO-1:	*Understand the basics of social media analytics and R language*	*3*	*80*	*70*
CLO-2:	*Analyze data from major social media channels such as Twitter & Flickr*	*3*	*85*	*75*
CLO-3:	*Acquire knowledge on fundamentals of text mining*	*3*	*75*	*70*
CLO-4:	*Perform prediction from text and evaluate it*	*3*	*85*	*80*
CLO-5:	*Perform document matching*	*3*	*85*	*75*

Program Learning Outcomes (PLO)														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Fundamental Knowledge	Application of Concepts	Linkwith Related Disciplines	Procedural Knowledge	Skills in Specialization	Ability to Utilize Knowledge	Skills in Modeling	Analyze, aInterpret Data	Investigative Skills	Problem Solving Skills	Communication Skills	Analytical Skills	ICT Skills	Professional Behavior	Life Long Learning
L	*H*	-	*H*	*L*	-	-	-	*L*	*L*	-	*H*	-	-	-
M	*H*	*L*	*M*	*L*	-	-	-	*M*	*L*	-	*H*	-	-	-
M	*H*	*M*	*H*	*L*	-	-	-	*M*	*L*	-	*H*	-	-	-
M	*H*	*M*	*H*	*L*	-	-	-	*M*	*L*	-	*H*	-	-	-
H	*H*	*M*	*H*	*L*	-	-	-	*M*	*L*	-	*H*	-	-	-

CLO-6 :	*Understand how text mining is implemented*	*3*	*80*	*70*	*L*	*H*	-	*H*	*L*	-	-	-	*L*	*L*	-	*H*	-	-	-

Duration (hour)		24	24	24	24	24
S-1	SLO-1	Getting Started with R and Social Media Analytics	Visualizing data	Overview of Text Mining	Using Text for Prediction	Finding Structure in a Document Collection
	SLO-2	Understanding Social Media	Managing packages	What's Special About Text Mining?	Recognizing that Documents Fit a Pattern	
S-2	SLO-1	Advantages and Significance of Social Media	Data analytics - Analytics workflow	Structured or Unstructured Data	How Many Documents Are Enough?	Clustering Documents by Similarity
	SLO-2	Disadvantages and Pitfalls of Social Media	Machine learning techniques	Is Text Different from Numbers?	Document Classification	Similarity of Composite Documents
S-3	SLO-1	Social media analytics	Supervised learning, Unsupervised learning	What Types of Problems Can Be Solved?	Learning to Predict from Text	k-Means Clustering
	SLO-2	A typical social media analytics workflow	Text analytics	Document Classification	Similarity and Nearest-Neighbor Methods	
S-4	SLO-1	Data access, Data processing and normalization, Data analysis and Insights	Understanding Twitter, APIs	Information Retrieval	Document Similarity	Hierarchical Clustering
	SLO-2	Opportunities and Challenges	Registering an application	Clustering and Organizing Documents	Decision Rules	
S-5 – S-8	SLO-1	*Lab 1: Simple Text Analytics*	*Lab 4: Text Analytics*	*Lab 7: Working with Classification*	*Lab 10: Working with Document Classification*	*Lab 13: implementing clustering algorithm*
	SLO-2					
S-9	SLO-1	Getting started with R	Connecting to Twitter using R	Information Extraction	Decision Trees	The EM Algorithm
	SLO-2	Environment setup	Extracting sample Tweets	Prediction and Evaluation	Scoring by Probabilities	
S-10	SLO-1	Data types	Trend analysis	From Textual Information to Numerical Vectors	Linear Scoring Methods	What Do a Cluster's Labels Mean?
	SLO-2	Data structures-Vectors		Collecting Documents	Evaluation of Performance - Estimating Current and Future Performance	Applications, Evaluation of Performance
S-11	SLO-1	Arrays	Sentiment analysis	Document Standardization	Getting the Most from a Learning Method	Case Study: Market Intelligence from the Web
	SLO-2	Matrices	Key concepts of sentiment analysis –Subjectivity, Sentiment polarity	Tokenization	Errors and Pitfalls in Big Data Evaluation	

S-12	SLO-1	Lists	Opinion summarization	Lemmatization-Inflectional Stemming	Information Retrieval and Text Mining	Case Study: Lightweight Document Matching for Digital Libraries
	SLO-2	Data Frames	Features	Stemming to a Root	Is Information Retrieval a Form of Text Mining?	
S-13 – S-16	SLO-1	*Lab 2: Working with Data structures*	*Lab 5: Working with Twitter data*	*Lab 8: Information Extraction*	*Lab 11:Decision Trees*	*Lab 14: EM Algorithm*
S-17	SLO-1	Functions - Built-in functions	Sentiment analysis in R	Vector Generation for Prediction	Key Word Search	Mining Social Media
	SLO-2	User-defined functions		Multiword Features	Nearest-Neighbor Methods	
S-18	SLO-1	Controlling code flow - Looping constructs	Follower graph analysis	Labels for the Right Answers, Feature Selection by Attribute Ranking	Measuring Similarity -Shared Word Count	E-mail Filtering
	SLO-2	Conditional constructs	Flickr Data Analysis	Sentence Boundary Determination	Word Count and Bonus, Cosine Similarity	
S-19	SLO-1	Advanced operations	Accessing Flickr's data	Part-of-Speech Tagging	Web-Based Document Search - Link Analysis	Emerging Directions
	SLO-2	apply, lapply	Understanding Flickr data	Word Sense Disambiguation	Document Matching	Summarization
S-20	SLO-1	sapply,tapply	Understanding interestingness – similarities	Phrase Recognition, Named Entity Recognition, Parsing	Inverted Lists	Active Learning
	SLO-2	mapply	Are your photos interesting? - Preparing the data -Building the classifier	Feature Generation	Evaluation of Performance	Learning with Unlabeled Data
S-21 – S-24	SLO-1	*Lab 3: Working with Looping and functions*	*Lab 6: Working with Flickr Data Analysis*	*Lab 9: Phrase Recognition*	*Lab 12: Nearest-Neighbor Methods*	*Lab 15: E-mail Filtering*

Learning Resources	1. Raghav Bali, Dipanjan Sarkar, Tushar Sharma, (2017), "Learning Social Media Analytics with R", Packt Publishing.	2. Sholom M. Weiss, Nitin Indurkhya, Tong Zhang, (2015), "Fundamentals of Predictive Text Mining", Second Edition, Springer London.

Learning Assessment

	Bloom's Level of Thinking	Continuous Learning Assessment (50% weightage)								Final Examination (50% weightage)	
		CLA – 1 (10%)		CLA – 2 (10%)		CLA – 3 (20%)		CLA – 4 (10%)#			
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember	20 %	20 %	20 %	20 %	20 %	20 %	20 %	20 %	20 %	20 %

	Understand										
Level 2	Apply Analyze	20 %	20 %	20 %	20 %	20 %	20 %	20 %	20 %	20 %	20 %
Level 3	Evaluate Create	10 %	10 %	10 %	10 %	10 %	10 %	10 %	10 %	10 %	10 %
	Total	100 %		100 %		100 %		100 %		100 %	

Course Designers		
Experts from Industry	**Experts from Higher Technical Institutions**	**Internal Experts**
	Dr.Muthu, Professor, Loyola College, Chennai	Mrs. S. Chandrakala, SRM IST
	Dr.Vincent, Associate Professor, VIT	

Course Code	*PAD21P01L*	Course Name	INTERNSHIP	Course Category	*P*	Project Work, Internship In Industry / Higher Technical Institutions	L	T	P	C
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Pre-requisite Courses	*Nil*	Co-requisite Courses	*Nil*	Progressive Courses	*Nil*
Course Offering Department	*Computer Applications*	Data Book / Codes/Standards	*Nil*		

Course Learning Rationale (CLR):	The purpose of learning this course is to,	Learning	Program Learning Outcomes (PLO)

		1	2	3
CLR-1 :	Demonstrate skills learnt in the real time environment.	Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)
CLR-2 :	Explore the different industries that are using IT			
CLR-3 :	Enhance the skills in the system aspects			
CLR-4 :	Understanding the professional connections with the knowledge learnt			
CLR-5 :	Applying the skills in problem solving			

Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:	1	2	3
CLO-1 :	To get an insight of an industry and organization/company	*3*	*80*	*70*
CLO-2 :	To gain valuable skills and knowledge	*3*	*85*	*75*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Disciplinary Knowledge	Critical Thinking	Problem Solving	Analytical Reasoning	Research Skills	Team Work	Scientific Reasoning	Reflective Thinking	Self-Directed Learning	Multicultural Competence	Ethical Reasoning	Community Engagement	ICT Skills	Leadership Skills	Life Long Learning
L	*H*	-	*H*	*L*	-	-	-	*L*	*L*	-	*H*	-	*H*	*H*
M	*H*	*L*	*M*	*L*	-	-	-	*M*	*L*	-	*H*	-	*H*	*H*