



Sri Indu

College of Engineering & Technology

UGC Autonomous Institution

Recognized under 2(f) & 12(B) of UGC Act 1956,

NAAC, Approved by AICTE &

Permanently Affiliated to JNTUH



HANDOUT

IV YEAR II SEMESTER

CSE (AIML)

DEPARTMENT OF CSE (AIML)

ACADEMIC YEAR 2025-2026

DEPARTMENT OF CSE (AIML)

HANDOUT- INDEX

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INSTITUTION VISION

To be a premier institution in engineering & technology and management for competency, values and social consciousness.

INSTITUTION MISSION

IM₁: Provide high quality academic programs, training activities and research facilities

IM₂: Promote continuous industry-institute interaction aimed at promoting employability, entrepreneurship, leadership and research aptitude among stakeholders.

IM₃: Contribute to the economic and technological development of the region, state and nation.

DEPARTMENT VISION

to develop competent engineers in the domain of Artificial Intelligence and Machine Learning for noteworthy contributions to the society.

DEPARTMENT MISSION

The Department has following Missions:

DM1: To strengthen academic collaborations for better exposure.

DM2: Promote professional environment to imbibe ethical values and entrepreneurial skills

DM3: Encourage research and development by emphasizing on innovation

DM4: Facilitate Industry-Institute collaboration for mutual benefit

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: Generate contributions towards advancements in Artificial Intelligence and Machine Learning

PEO 2: Promote design, research and implementation of products through strong communication skills, leadership and entrepreneurial skills.

PEO 3: Apply basic principles and practices of AIML to successfully complete software related projects to meet customer business objectives and/or productively engage in research.

PROGRAM OUTCOMES (POs)

PO1	Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)
PO3	Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)
PO4	Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modeling, analysis & interpretation of data to provide valid conclusions. (WK8).
PO5	Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modeling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)
PO6	The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).
PO7	Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)
PO8	Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
PO9	Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences
PO10	Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.
PO11	Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

	Program specific Outcomes(PSOs)
PSO1	Register mathematical methodology to crack problems using suitable data structures.
PSO2	Competence to design and develop software for web based and mobiles androids under real world environment
PSO3	Skill to design the algorithms for machine learning, data compression can be used in different applications.

SYLLABUS

BR22 - B.TECH. - CSE(ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi)

B.Tech. - IV Year - II Semester

L	T	P	C
3	0	0	3

Professional Elective - V (R22CSM4241) SOCIAL NETWORK ANALYSIS

Course Objectives:

1. It introduces the concepts of social media
2. It provides the mechanisms for social network analysis
3. Includes the concepts that allow for better visualization and analysis of widely used services such as email, Wikis, Twitter, flickr, YouTube, etc.

Course Outcomes:

1. Ability to construct social network maps easily
2. Gain skills in tracking the content flow through the social media
3. Use NodeXL to perform social network analysis

UNIT - I:

Introduction: Social Media and Social Networks. **Social Media:** New Technologies of Collaboration. **Social Network Analysis:** Measuring, Mapping, and Modeling collections of Connections.

UNIT - II:

NodeXL, Layout, Visual Design, and Labeling, Calculating and Visualizing Network Metrics, Preparing Data and Filtering, Clustering and Grouping.

UNIT - III:

CASE STUDIES - I:

Email: The lifeblood of Modern Communication. **Thread Networks:** Mapping Message Boards and Email Lists. **Twitter:** Conversation, Entertainment and Information.

UNIT - IV:

CASE STUDIES - II: Visualizing and Interpreting Facebook Networks, WWW Hyperlink Networks

UNIT-V:

CASE STUDIES - III:

You Tube: Contrasting Patterns of Content Interaction, and Prominence. **Wiki Networks:** Connections of Creativity and Collaboration.

TEXT BOOKS:

1. Hansen, Derek, Ben Shneiderman, Marc Smith, Analyzing Social Media Networks with NodeXL: Insights from a Connected World, Morgan Kaufmann, 2011.
2. Avinash Kaushik, Web Analytics 2.0: The Art of Online Accountability, Sybex, 2009.

REFERENCE BOOK:

1. Marshall Sponder, Social Media Analytics: Effective Tools for Building, Interpreting and Using Metrics, 1st Edition, MGH, 2011.



SRIINDUCOLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT COMPUTER SCIENCE AND ENGINEERING (AIML)

CO's MAPPING WITH PO's & PSO's

SOCIAL NETWORK ANALYSIS (R22CSM4241)

At the end of the course, the student will be able to mapping of Course

Course Outcomes(COs)	
C421.1	Ability to gain skills and construct social network maps easily
C421.2	Use NodeXL to perform social network analysis
C421.3	Learn to work within principles or 'rules of thumb' to ensure professional, clear & effective emails and lists
C421.4	Learners should be able to compare and contrast twitter networks
C421.5	To create the shortest path between face book and hyperlink networks
C421.6	Design you tube channels and create wiki networks

Course Articulation Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
C421.1	3	3	2	3	3	-	-	-	-	3	3	2	2	3
C421.2	3	2	3	3	2	-	-	-	-	2	2	2	3	3
C421.3	2	2	2	2	2	-	-	-	-	3	2	3	2	3
C421.4	2	3	2	2	1	-	-	-	-	2	2	2	2	3
C421.5	3	3	1	1	2	-	-	-	-	2	1	3	3	3
C421.6	3	3	2	2	1	-	-	-	-	3	1	3	3	3
C421	2.66	2.67	2.0	2.5	2.6	-	-	-	-	2.5	1.83	2.66	2.66	3

ACADEMIC CALENDAR



SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution under UGC, New Delhi)
Recognized under 2(i) and 12(B) of UGC Act 1956
NBA & NAAC Accredited. Approved by AICTE and Permanently affiliated to JNTUH
Sheriguda (V), Ibrahimpatnam, R.R. Dist, Hyderabad - 501 510

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ANNEXURE -II

BR-22

Lr.No.SICET/AUTO/DAE/III B.Tech Academic Calendar/29/2025

B.TECH III-YEAR I-SEM & II-SEM ACADEMIC CALENDAR **(FOR ACADEMIC YEAR : 2025-26)**

Academic Calendar for B.Tech – IIIrd Year Students (2023 - 24 Batch), BR-22 Regulation.

I – Semester

S.No.	EVENT	PERIOD	DURATION
1.	Commencement of class work.	14.07.2025 (Monday)	
2.	1 st Spell of Instructions for covering First Two and a half Units.	14.07.2025 – 13.09.2025	9 Weeks
3.	CRT Classes	15.09.2025 – 07.10.2025	2 Weeks 2 Days
4.	I Mid Term Examinations.	08.10.2025 – 10.10.2025	3 Days
5.	Submission of I Mid Term Examination Marks.	16.10.2025	
6.	2 nd Spell of Instructions for Remaining Two and a half Units.	13.10.2025 – 13.12.2025	9 Weeks
7.	II Mid Term Examinations.	15.12.2025 – 17.12.2025	3 Days
8.	Preparation Holidays and Practical Examinations	18.12.2025 – 27.12.2025	1 Week
9.	Submission of II Mid Term Examination Marks.	23.12.2025	
10.	I Semester End Examinations.	29.12.2025 – 10.01.2026	2 Weeks
Commencement of Class-Work for III B.Tech - II Semester 19.01.2026			

Note: No of Working/instructional days : 90

II – Semester

S.No.	EVENT	PERIOD	DURATION
1.	Commencement of class work.	19.01.2026 (Monday)	
2.	1 st Spell of Instructions for covering First Two and a half Units.	19.01.2026 – 14.03.2026	8 Weeks
3.	I Mid Term Examinations.	16.03.2026 – 18.03.2026	3 Days
4.	Submission of I Mid Term Examination Marks.	24.03.2026	
5.	2 nd Spell of Instructions for Remaining Two and a half Units.	20.03.2026 – 09.05.2026	7 Weeks
6.	Continuation of remaining 2 nd Spell of Instructions	25.05.2026 – 10.06.2026	2 Weeks
7.	II Mid Term Examinations.	11.06.2026 – 13.06.2026	3 Days
8.	Preparation Holidays and Project Evaluation.	15.06.2026 – 20.06.2026	1 Week
9.	Submission of II Mid Term Examination Marks.	18.06.2026	
10.	II Semester End Examinations	22.06.2026 – 04.07.2026	2 Weeks

Note: No of Working/instructional days : 93

ACE

CE

DIRECTOR

PRINCIPAL

Controller of Examination
Sri Indu College of Engineering & Technology
(An Autonomous Institution Under UGC)
Sheriguda (V), Ibrahimpatnam, R.R. Dist-501510

DIRECTOR
Sri Indu College of Engineering & Technology
(An Autonomous Institution Under UGC)
Sheriguda (V), Ibrahimpatnam, R.R. Dist-501510.

PRINCIPAL
Sri Indu College of Engineering & Technology
(An Autonomous Institution Under UGC)
Sheriguda (V), Ibrahimpatnam, R.R. Dist-501510

Sign:

Dr. M.V.S.S. Giridhar
Prof. of CEA; JNTUH Nominee

Sign:

Dr. T. Venu Gopal
Prof. of CSE; JNTUH Nominee

Sign:

Dr. D. Ramesh
Prof. of CSE; JNTUH Nominee

(Copy to DAP&E and Copy to all the Dept. Heads)

DEPARTMENT CALENDAR

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY(AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING[AI&ML] DEPARTMENT CALENDAR – 2025-2026[SEMESTER-II]

				Feb-28		Mar-26						
SUNDAY		Dec-25		1		1						Jan-26
MONDAY	1			2		2						1
TUESDAY	2			II YR CRT TRAINING		II YR CRT TRAINING		Apr-26				2 II YR TRAINING
WEDNESDAY	3		Jan-26	3		4 HOU HOLIDAY	1					3
THURSDAY	4		NEW YEAR HOLIDAY	5		5	2 II YR TRAINING		May-26			4
FRIDAY	5	AI CLUB MEETING	2	II YR CRT TRAINING	6	II YR CRT TRAINING	3	WOOD FRIDAY HOLIDAY	1	IV-II MID II EXAMS	5	II YR TRAINING
SATURDAY	6	DEPARTMENT MEETING	3	AI CLUB MEETING	7		4	AI CLUB MEETING	2	IV-II MID II EXAMS	6	
SUNDAY	7	HOLIDAY	4	HOLIDAY	8	HOLIDAY	5	HOLIDAY	3	HOLIDAY	7	HOLIDAY
MONDAY	8		5		9		6		4	IV-I PREPARATION HOLIDAYS	8	
TUESDAY	9		6	II YR CRT TRAINING	10	II YR CRT TRAINING	7	II YR TRAINING	5	IV-I PREPARATION HOLIDAYS	9	
WEDNESDAY	10		7		11		8		6	IV-I PREPARATION HOLIDAYS	10	
THURSDAY	11		8		12		9		7	SUBMISSION OF MID-I MARKS	11	I-I&II-I MID I EXAM
FRIDAY	12		9	II YR CRT TRAINING	13	II YR CRT TRAINING	10	II YR TRAINING	8	IV-I PREPARATION HOLIDAYS	12	I-I&II-I MID I EXAM
SATURDAY	13		10	DEPARTMENT MEETING	14		11	DEPARTMENT MEETING	9	IV-I PREPARATION HOLIDAYS	13	I-I&II-I MID I EXAM
SUNDAY	14	HOLIDAY	11	HOLIDAY	15	HOLIDAY	12	HOLIDAY	10	HOLIDAY	14	HOLIDAY
MONDAY	15	IV-II COMMENCEMENT WORK	12		16 IV-I MID I EXAM	II & II-II MID I EXAM	13		11	IV-II SEM EXAMS	15	I-I&II-I PREF HOLIDAYS & PROJECT EVALUATION
TUESDAY	16		13 PONGAL HOLIDAYS	17	IV-I MID I EXAM, II YR TRAINING	II & II-II MID I EXAM, II YR TRAINING	14	D.RAMBODHAR JAYANTI HOLIDAY	12	IV-II SEM EXAMS	16	I-I&II-I PREF HOLIDAYS & PROJECT EVALUATION
WEDNESDAY	17		14 PONGAL HOLIDAYS	18	IV-I MID I EXAM	II & II-II MID I EXAM	15		13	IV-II SEM EXAMS	17	I-I&II-I PREF HOLIDAYS & PROJECT EVALUATION
THURSDAY	18		15 PONGAL HOLIDAYS	19	IV-II 2ND SPELL		16		14	IV-II SEM EXAMS	18	I-I&II-I PREF HOLIDAYS & PROJECT EVALUATION
FRIDAY	19		16 PONGAL HOLIDAYS	20	II YR CRT TRAINING	II -I & II-II / II SPELL INSTRUCTIONS	17	II YR TRAINING	15	IV-II SEM EXAMS,	19	I-I&II-I PREF HOLIDAYS & PROJECT EVALUATION
SATURDAY	20		17 PONGAL HOLIDAYS	21			18		16	IV-II SEM EXAMS	20	I-I&II-I PREF HOLIDAYS & PROJECT EVALUATION
SUNDAY	21	HOLIDAY	18	HOLIDAY	22	HOLIDAY	19	HOLIDAY	17	HOLIDAY	21	HOLIDAY
MONDAY	22		19 II &II-II COMMENCEMENT WORK	23			20		18		22	II-I & II-II SEM END EXAMS
TUESDAY	23		20	SUBMISSION OF IV-I MID I MARKS, II YR TRAINING	24	SUBMISSION OF II-II MID I MARKS	21	II YR TRAINING	19	II YR TRAINING	23	II-I & II-II SEM END EXAMS

SOCIAL NETWORK ANALYSIS

LESSON PLAN



SRI INDU COLLEGE OF ENGG & TECH

LESSON PLAN

(Regulation :R22)

Department of Computer Science and Engineering (AIML)

Prepared
on Rev1:
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Sub. Code & Title

(R22CSM4241)

SOCIAL NETWORK ANALYSIS

Academic Year: 2025-26

Year/Sem./Section

IV-II SEM

Faculty Name & Designation

M.SWATHI REDDY, ASSISTANT PROFESSOR

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	CO/R BT
			From	To			
	UNIT-I						
	Introduction						
I.	SOCIAL MEDIA					14	
1.1	Introduction	T-1	3	9	BLACKBOARD, PPT	2	CO1
1.2	Social Media	T-1	11	16	BLACKBOARD	1	CO1
1.3	Social Networks	T-1	17	28	BLACKBOARD	2	CO1
1.4	Social Media: New Technologies of Collaboration	T-1	31	35	PPT	3	CO1
1.5	Measuring	T-1	39	41	BLACKBOARD	3	CO1
1.6	Mapping	T-1	42	46	BLACKBOARD	1	CO1
1.7	Modeling collections of Connections.	T-1	47	48	BLACKBOARD	2	CO1
	Review	Signature of the HOD/Coordinator					



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SOCIAL NETWORK ANALYSIS

Academic Year: 2025-26

Year/Sem./Section

IV-II SEM

Faculty Name & Designation

M.SWATHI REDDY, ASSISTANT PROFESSOR

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	CO/R BT
			From	To			
	UNIT-II						
II	NODEXL					16	
2.1	NodeXL,	T-1	53	57	BLACKBOARD	2	CO2
2.2	Layout	T-1	57	59	PPT	1	CO2
2.3	Visual Design	T-1	59	63	BLACKBOARD	3	CO2
2.4	Labeling	T-1	63	66	BLACKBOARD	2	CO2
2.5	Calculating and Visualizing Network Metrics	T-1	69	78	BLACKBOARD	2	CO2
2.6	Preparing Data and Filtering	T-1	79	91	BLACKBOARD	2	CO2
2.7	Clustering	T-1	93	101	SEMINAR	2	CO2
2.8	Grouping	T-1	93	101	BLACKBOARD	1	CO2
2.9	Examples	T-1	101	102	SEMINAR	1	CO2
	Review	Signature of the HOD/Coordinator					



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SOCIAL NETWORK ANALYSIS

Academic Year: 2025-26

Year/Sem./Section

IV-II SEM

Faculty Name & Designation

M.SWATHI REDDY, ASSISTANT PROFESSOR

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	CO/R BT
			From	To			
	UNIT-III						
	CASE STUDIES-1						
III	CASE STUDIES-1					14	
3.1	Email:	T-1	105	118	BLACKBOARD	2	CO3
	The life blood of Modern Communication.	T-1	118	122			
3.2	Thread Networks: Mapping	T-1	127	140	BLACKBOARD	1	CO3
3.3	Message Boards and Email Lists	T-1	129	140	BLACKBOARD	4	CO3
3.4	Twitter:	T-1	143	163	PPT	2	CO4
3.5	Conversation, Entertainment and Information.	T-1	143	163	BLACKBOARD	1	CO4
3.6	Examples	T-1	164	164	BLACKBOARD	1	CO4
	Review	Signature of the HOD/Coordinator					



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SOCIAL NETWORK ANALYSIS

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Year/Sem./Section

IV-II SEM

Faculty Name & Designation

M.SWATHI REDDY, ASSISTANT PROFESSOR

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	CO/R BT
			From	To			
	UNIT-IV						
	CASE STUDIES-II						
IV.	CASE STUDIES-II					12	
4.1	Visualizing	T-1	165	173	BLACKBOARD	2	CO5
4.2	Interpreting Facebook Networks	T-1	174	179	BLACKBOARD	1	CO5
4.3	History	T-1	179	179	BLACKBOARD	4	CO5
4.4	WWW:	T-1	181	197	PPT	2	CO5
4.5	Hyperlink Networks	T-1	181	197	BLACKBOARD	2	CO5
4.6	Examples	T-1	197	198	BLACKBOARD	1	CO5
	Review	Signature of the HOD/Coordinator					



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SOCIAL NETWORK ANALYSIS

Academic Year: 2025-26

Year/Sem./Section

IV-II SEM

Faculty Name & Designation

M.SWATHI REDDY, ASSISTANT PROFESSOR

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	CO/R BT
			From	To			
	UNIT-V						
	CASE STUDIES-1II					12	
V	CASE STUDIES-1II						
5.1	YouTube	T-1	225	229	BLACKBOARD	1	CO6
5.2	History	T-1	229	230			
5.3	Contrasting Patterns of Content Interaction	T-1	231	245			
5.4	Prominence	T-1	235	236	BLACKBOARD	2	CO6
5.5	Wiki Networks:	T-1	247	253	PPT	2	CO6
5.6	Connections of Creativity	T-1	255	261	BLACKBOARD	2	CO6
5.7	Collaboration	T-1	261	270	BLACKBOARD	2	CO6
5.8	Examples	T-1	269	271	BLACKBOARD	1	CO6
	Review	Signature of the HOD/Coordinator					

TEXT BOOKS:

T1:

Hansen, Derek, Ben Sheiderman, Marc Smith, Analyzing Social Media Networks with NodeXL: Insights from a Connected World, Morgan Kaufmann, 2011.

T2: Avinash Kaushik, Web Analytics 2.0: The Art of Online Accountability, Sybex, 2009.

T3: Social network analysis by Tanmoy Chakraborty

REFERENCE BOOK:

R1: Marshall Sponder, Social Media Analytics: Effective Tools for Building, Interpreting and Using Metrics, 1st Edition, MGH, 2011.

REFERENCES:

- Social Network Analysis: Methods and Applications (Structural Analysis in the Social Sciences)" by Stanley Wasserman and Katherine Faust ...
- "Jury Decision Making and Social Network Analysis" by Katarzyna Hano ...
- "Social Network Analysis for Startups" by Maksim Tsvetovat ...
- "The Development of Social Network Analysis" by Linton C Freeman
- "Computational Social Network Analysis" by Kai Subel
- "Social network analysis by Tanmoy Chakraborty"

WebLinks:

W1: [12 of the Best Social Media Analytics Tools for Marketers | Sprout Social](#)

W2: [Social Media Data Analytics Resources | Sprout Social](#)

W3: [Social Network Analysis: How to Get Started | Built In](#)

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	LESSON PLAN		
	(Regulation :R22)		
	Department of Computer Science and Engineering (AIML)		
Sub. Code & Title	(R22CSM4241) SOCIAL NETWORK ANALYSIS		
Academic Year: 2025-26	Year/Sem./Section	IV-II SEM	
Faculty Name & Designation	M.SWATHI REDDY,ASSISTANT PROFESSOR		

QUESTIONBANK

QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

(1. Remembering 2. Understanding 3. Applying 4. Analyzing 5. Evaluating 6. Creating)

UNIT I			
Multiple Choice Questions		BT Level	Course Outcome
#1C-1	What is the primary function of social media platforms? a) To enable users to watch movies online b) To enable communication and sharing of content among users c) To purchase products directly d) To analyze market trends	I	C01
#1C-2	Which of the following is an example of a social media platform? a) Instagram b) Microsoft Excel c) Adobe Photoshop d) Google Docs	II	C01
#1C-3	Social media can be described as a technology for: a) Selling products b) Storing documents c) Creating video games d) Collaboration and communication	II	C01
#1C-4	What does Social Network Analysis (SNA) primarily focus on? a) The economic impact of social media b) The relationships and interactions between individuals in a network c) The design of social media apps d) The hardware used for social media platforms	I	C01
#1C-5	Which term refers to the connections or links between nodes in a social network? a) Vertices b) Vectors	III	C01

	c) Edges d) Nodes		
#1C-6	In Social Network Analysis, what does a 'node' typically represent? a) A single user or entity in the network b) A connection between two users c) A type of social media platform d) A group of users	II	C01
#1C-7	Which of the following is NOT typically measured in Social Network Analysis? a) Centrality b) Clustering coefficient c) User preferences d) Network density	I	C01
#1C-8	Which of the following is an example of a collaborative feature found in many social media platforms? a) Video calling b) Shopping c) Customizing app themes d) User-generated content sharing (e.g., photos, blogs)	VI	C01
#1C-9	What does 'centrality' refer to in Social Network Analysis? a) How important a node is within the network b) The average number of connections in a network c) The geographical location of the users d) The type of social media platform	II	C01
#1C-10	What is the main advantage of using social media for collaboration? a) Increased exposure to advertisements b) Greater control over privacy settings c) Ability to connect with a global audience d) Limited interaction between users	I	C01
#1C-11	Which type of social network structure is characterized by a few users with many connections, and many users with few connections? a) Star network b) Small-world network c) Random network d) Hierarchical network	I	C01
#1C-12	Which method of Social Network Analysis identifies communities within a network? a) Degree centrality b) Closeness centrality c) Betweenness centrality d) Modularization	II	C01
#1C-13	Which of the following is NOT a social network? a) Facebook b) LinkedIn c) Twitter d) Google Search	III	C01

#1C-14	Which term refers to the number of connections each node has in a social network? a) Degree b) Clustering coefficient c) Betweenness d) Eigenvector centrality	I	C01
#1C-15	What does a 'clustering coefficient' measure in Social Network Analysis? a) The number of people a person knows b) The influence of a specific node c) How interconnected a node's neighbors are d) The total number of nodes in a network	IV	C01
Filling The Blank Questions			
1F-1	Social media platforms, like Facebook, Instagram, and Twitter, enable users to _____ with one another by sharing content, thoughts, and experiences.	II	C01
1F-2	The concept of _____ refers to a group of interconnected individuals or entities, which can be analyzed in terms of relationships and interactions.	II	C01
1F-3	In Social Network Analysis (SNA), a _____ represents an individual or entity in the network, such as a person, organization, or even a web page.	I	C01
1F-4	The _____ is the connection between two nodes in a social network, representing interactions like friendship, communication, or collaboration.	I	C01
1F -5	In SNA, _____ centrality measures how often a node appears on the shortest path between other nodes in the network.	III	C01
1F -6	A _____ layout arranges the nodes in a social network based on attractive and repulsive forces, helping to reveal patterns in the network structure.	I	C01
1F -7	One of the key benefits of social media is its ability to facilitate _____, where people can work together, share ideas, and create content online.	I	C01
1F -8	In Social Network Analysis, the _____ centrality of a node is determined by how close it is to all other nodes in the network.	II	C01
1F -9	Social media platforms, like Twitter, are designed to allow _____ interactions, where users can share short, real-time updates with their followers.	II	C01
1F -10	To better understand patterns of social connections, Social Network Analysis often involves _____, which groups nodes into communities based on shared characteristics or behaviors.	I	C01
Match The Following Questions			
1M-1	1. Force-Directed Layout	A. Nodes are arranged in a grid pattern for	a) II C01

			easy comparison.			
		2. Circular Layout	B. Nodes are positioned based on attractive and repulsive forces to minimize edge crossings.			
		3. Grid Layout	Nodes are arranged in a circular shape, showing connections clearly around the center.			
		4. Hierarchical Layout	D. Nodes are arranged in a tree-like structure to represent parent-child relationships.			
1M-2		1. Social Media	A. A set of algorithms used to analyze relationships between people in a network	b)		
		2. Social Network	B. Platforms like Facebook, Instagram, and Twitter where people interact and share content.	III	CO1	
		3. Social Network Analysis	A network of interconnected individuals or organizations that share relationships.			
		4. Collaboration	D. The process of people working together to create or contribute content.	d)		
1M-3		1. Degree Centrality	A. Measures a node's proximity to all other nodes in the network.	c)		
		2. Betweenness Centrality	B. Measures how often a node appears on the shortest paths between other nodes			
		3. Closeness Centrality	Measures the number of direct connections a node has to other nodes..	II	CO1	
		4. Eigenvector Centrality	D. Measures a node's influence by considering both the number and quality of its connections.			
1M-4		1. Force-Directed Layout	A. Nodes are arranged in a tree-like structure to represent parent-child relationships.	d)		
		2. Circular Layout	B. Nodes are positioned based on attractive and repulsive forces to minimize edge crossings.	I	CO1	
		3. Grid Layout	Nodes are arranged in a circular shape, showing connections clearly around the center.	d)		
		4. Hierarchical Layout	D. Nodes are arranged in a grid pattern for easy comparison.	d)		
1M-5		1. Facebook	A. A platform for sharing professional updates, networking, and job hunting.	e)		
		2. Twitter	B. A place for real-time, short, public conversations and sharing of news.	II	CO1	
		3. LinkedIn	A photo and video-sharing platform, often used for creative expression and lifestyle	d)		

			content.			
		4. Instagram	D. A platform for connecting with friends, sharing personal updates, and joining communities.	i)		
5 MARKS QUESTIONS						
1D-1	Difference Socio-Centric Network Analysis from Ego-Centric Network Analysis?			IV	CO1	
1D-2	Explain Degree of a node with example of undirected and weighted network?			II	CO1	
1D-3	Differentiate between microscopic and macroscopic networks?			IV	CO1	
1D-4	Write about levels of social network analysis?			III	CO1	
1D-5	Write a summery on social media level with examples?			VI	CO1	
1D-6	Differentiate between Asynchronous threaded conversation and synchronous threaded conversation?			IV	CO1	
1D-7	Briefly Explain degree distribution of a node with examples?			V	CO1	
1D-8	Write about the types of networks?			III	CO1	
1D-9	Explain about network analysis metrics?			IV	CO1	
1D-10	Write about tools for network analysis?			III	CO1	
1D-11	Analyze in detail about the Social Networks and Personal Networks.(Dec 23)			IV	CO1	
1D-12	Examine the Network analysis metrics.			IV	CO1	
UNIT-II						
Multiple Choice Questions				BT Level	Course Outcome	
2C-1	What is NodeXL primarily used for? a) Creating 3D models for games b) Programming web applications c) Analyzing and visualizing social networks d) Designing websites			II	CO2	
2C-2.	In NodeXL, what is the purpose of a "layout" in the network visualization? a) To organize the data for export b) To position nodes and edges to reveal patterns in the network c) To add labels to each node d) To color the network based on node centrality			II	CO2	
2C-3.	Which layout in NodeXL would be most useful for visualizing the centrality of a specific node? a) Circular layout b) Grid layout			I	CO2	

	c) Fruchterman-Reingold layout d) Force-directed layout		
2C-4.	What does the "visual design" in NodeXL focus on? a) The speed of data processing b) The appearance and style of the network graph c) The layout of nodes in a table d) The algorithms used to find the shortest path	II	C02
2C-5.	What is the purpose of "labeling" nodes in NodeXL? a) To highlight the node's color b) To make the network visually more attractive c) To provide information about the nodes, such as names or IDs d) To assign weights to edges	III	C02
2C-6.	Which of the following metrics can NodeXL calculate to evaluate the importance of a node in the network? a) Node degree b) Node betweenness c) Closeness centrality d) All of the above	II	C02
2C-7.	What is the function of calculating "network metrics" in NodeXL? a) To analyze the structural properties of the network, such as centrality and density b) To calculate the cost of transferring data y c) To determine how many nodes are available in the network d) To increase the speed of the network	II	C02
2C-8.	What is the first step in "preparing data" for use in NodeXL? a) Clean and format the data into a proper structure (edges and nodes) b) Create a layout for the graph c) Assign colors to nodes d) Start clustering the nodes	I	C02
2C-9.	How can you "filter" data in NodeXL? a) By adjusting the visual design of the network b) By exporting the network to a different software c) By removing edges or nodes based on specific criteria, such as degree or centrality d) By changing the layout of the network	II	C02
2C-10.	Which of the following clustering methods is available in NodeXL? a) K-means clustering b) Girvan-Newman algorithm c) Community detection using modularity d) All of the above	III	C02
2C-11.	In NodeXL, which feature allows you to group nodes based on their characteristics? a) Network metrics b) Data preparation c) Clustering and community detection d) Edge weighting	II	C02

2C-12.	What is a "force-directed layout" in NodeXL? a) A layout that arranges nodes in a grid pattern b) A layout where nodes are positioned based on attractive and repulsive forces to minimize edge crossings c) A layout where nodes are arranged randomly d) A layout that uses physical forces to align nodes and edges	I	C02
2C-13.	When visualizing a network in NodeXL, which of the following helps to enhance the clarity of the graph? a) Using vibrant colors for all nodes b) Labeling every node in the network c) Filtering out nodes with low centrality or degree d) Adding more edges between every pair of nodes	III	C02
2C-14.	Which type of network metric in NodeXL helps to identify nodes that are most likely to control the flow of information? a) Closeness centrality b) Degree centrality c) Betweenness centrality d) Eigenvector centrality	I	C02
2C-15	How does NodeXL handle "grouping" of nodes in a network? a) By categorizing nodes according to their size b) By organizing nodes into clusters based on their relationships or centrality measures c) By separating nodes into predefined categories d) By assigning random colors to nodes	II	C02
	Filling The Blank Questions		
2F-1	In NodeXL, a _____ is used to represent the individual entities, such as people or organizations, in a social network.	II	C02
2F-2	The _____ layout in NodeXL arranges the nodes based on forces of attraction and repulsion, which helps to visualize the structure of the network.	II	C02
2F-3	The _____ feature in NodeXL allows users to customize the appearance of nodes and edges, such as adjusting colors, shapes, and sizes, to improve the clarity of the visualization.	I	C02
2F-4	In NodeXL, _____ allows users to assign descriptive information (such as names or roles) to the nodes so that each node can be easily identified within the network.	I	C02
2F-5	One key network metric calculated in NodeXL is _____ centrality, which measures the number of direct connections a node has to other nodes in the network.	II	C02
2F-6	To understand how nodes are connected within the network, NodeXL allows users to calculate _____ centrality, which measures how often a node lies on the shortest path between other nodes.	I	C02
2F-7	When preparing data for analysis in NodeXL, it is important to ensure that the	III	C02

	data is in the correct format, with edges represented as _____ between nodes in the network.					
2F-8	In NodeXL, the _____ feature enables users to filter out less important nodes or edges, allowing for a clearer view of the key structures in the network.			II	C02	
2F-9	The _____ method in NodeXL is used to group nodes that share common characteristics, helping to identify communities or clusters within the network.			III	C02	
2F-10	In NodeXL, the _____ metric helps identify the importance of nodes by examining how quickly a node can reach other nodes within the network, based on their relative proximity.			I	C02	
	Match The Following Questions					
2M-1		List I	List II		II	C02
		1. NodeXL	A. Helps display the structure of the network, often through a force-directed model.			
		2. Layout	B. customizing node and edge colors, sizes, and styles.			
		3. Visual Design	C. Allows users to group nodes based on common characteristics or behaviors.			
		4. Labeling	D. Assigns identifying text to			
2M-2		List I	List II		I	C02
		1. Degree Centrality	A. Measures a node’s influence based on how frequently it appears on the shortest paths between other nodes.			
		2. Betweenness Centrality	B. Measures the number of connections a node has to other nodes in the network.			
		3. Closeness Centrality	C. Measures how easily a node can access other nodes, based on the average length of the shortest paths.			
		4. Eigenvector Centrality	D. Measures a node's influence by considering the number and quality of its connections.			
2M-3		List I	List II		II	C02
		1. Data Cleaning	A. Changes the format or structure of the data to make it compatible with the analysis tool.			
		2. Filtering	B. Removes irrelevant or redundant information from the dataset.			
		3. Data Transformation	C. Adjusts values to a standard scale, allowing better comparison of nodes			

			and edges.			
		4. Normalization	D. Filters out noise by excluding edges or nodes based on criteria such as degree or attributes.			
2M-4		List I	List II		I	CO2
		1. Community Detection	A. Creates a tree-like structure of nested clusters based on their similarity, starting with individual nodes.			
		2. Modularization	B. Groups nodes into clusters based on their shared characteristics or behaviors.			
		3. K-means Clustering	C. Groups nodes based on a pre-defined number of clusters, optimizing internal similarity.			
		4. Hierarchical Clustering	D. Detects subgroups in a network where nodes are more connected to each other than to the rest of the network.			
2M-5		List I	List II		III	CO2
		1. Force-Directed Layout	1. Nodes are placed based on hierarchical relationships, typically used for tree-like structures.			
		2. Circular Layout	2. Nodes are arranged in a circle, with edges drawn between them to show connections.			
		3. Grid Layout	3. Nodes are arranged in a grid pattern to help visualize connections clearly.			
		4. Hierarchical Layout	4. Nodes are positioned based on forces of attraction and repulsion, minimizing edge crossings.			

5 MARKS QUESTIONS

2D-1	How can we start NodeXL with examples?	III	CO2
2D-2	Explain the types of layout in NodeXL?	II	CO2
2D-3	Explain (a) Betweenness centrality (B) Closeness centrality (C) Eigen vector centrality	II	CO2
2D-4	How can u arrange vertices in the graph pane?	III	CO2
2D-5	Write a summary on clustering?	VI	CO2

2D-6	Explain about how to create clusters manually?	IV	CO2
2D-7	Briefly explain about visual design?	V	CO2
2D-8	How can u automatically identify clusters?	III	CO2
2D-9	Explain layout along with multiple examples.	II	CO2
2D-10	Write about overall graph metrics?	IV	CO2
2D-11	Illustrate the working principle of NodeXL files.(Dec 23)	II	CO2
2D-12	Explain the role of visualization and show the visual representation methods for visualizing social networks. (Dec 23)	II	CO2
UNIT-III			
Multiple Choice Questions		BT Level	Course Outcome
3C-1	Why is email often considered the "lifeblood" of modern communication? a) It allows for instant communication and documentation b) It is the most secure form of communication c) It is the only form of communication used in business d) It has a high character limit for messages	I	CO3
3C-2	What is the primary purpose of an email "thread" in modern communication? a) To send multiple messages to a single recipient b) To organize replies and responses in a continuous conversation c) To separate different types of emails (urgent vs. non-urgent) d) To filter out spam messages	II	CO3
3C-3	What kind of network is represented by message boards and email lists? a) Social media network b) Content delivery network c) Closed network d) Thread network	I	CO3
3C-4	Which of the following is a key feature of thread networks, such as message boards or email lists? a) Users can only post one message at a time b) Discussions are organized chronologically, making it easy to follow the conversation c) Messages disappear after 24 hours d) Only a single user can post a message at once	II	CO3
3C-5	How do email lists typically function in professional or academic settings? a) By creating direct one-on-one communication between users b) By limiting communication to specific individuals c) By allowing large groups of people to exchange messages on a specific topic d) By providing a platform for multimedia sharing	I	CO3
3C-6	What is a key advantage of using message boards over traditional email for discussion groups?	II	CO3

	a) They allow for faster communication b) They can hold private conversations c) They allow many users to discuss topics openly and asynchronously d) They restrict the number of messages sent to one recipient		
3C-7	What makes Twitter unique compared to other social media platforms? a) It only allows for private messaging b) It requires users to use real names c) It is primarily used for video streaming d) It limits users to short, 280-character posts called "tweets"	I	CO3
3C-8	What is the primary function of "hashtags" on Twitter? a) To organize posts and allow for easy searching of topics b) To limit the number of characters in a tweet c) To highlight the most popular tweets d) To send private messages to specific users	II	CO3
3C-9	How has Twitter transformed conversation in the digital age? a) By limiting the type of content users can share b) By allowing users to express short, public thoughts on various topics instantly c) By creating a space for private discussions only d) By blocking all external links from appearing in tweets	I	CO3
3C-10	What role does Twitter play in modern entertainment? a) It only serves as a tool for customer support b) It is mainly used for business transactions c) It allows celebrities and fans to interact directly and share updates d) It restricts the sharing of multimedia content	III	CO4
3C-11	What is one challenge with using email for communication in large groups? a) There is no way to organize emails by topic b) Emails are limited to 140 characters c) Email services are too expensive d) Conversations can become difficult to follow due to large volumes of responses	II	CO4
3C-12	In a thread network, such as on a message board or email list, what does "threading" refer to? a) The chronological sorting of messages based on their time of arrival b) The process of hiding certain messages from others c) Organizing messages based on their topic or subject matter d) Adding images and videos to each message	III	CO4
3C-13	What type of network is commonly associated with Twitter's "retweet" function? a) Hub-and-spoke network b) Thread network c) Viral network d) Peer-to-peer network	II	CO4
3C-14	Which of the following best describes the role of Twitter in information dissemination? a) It allows users to share long-form articles and detailed analysis	III	CO4

	b) It is used primarily for academic research purposes c) It restricts users from sharing external links d) It serves as a platform for real-time updates on news, trends, and opinions				
3C-15	Why are message boards and email lists still relevant in modern communication? a) They allow for real-time communication, like social media b) They support asynchronous discussions, making it easier for users in different time zones to engage c) They focus only on visual content, such as images and videos d) They have strict privacy controls that prevent spam messages			III	C04
Filling The Blank Questions					
3F-1	Email is considered the _____ of modern communication because it enables fast, asynchronous, and efficient exchange of information across different locations.			I	C03
3F-2	A _____ network in the context of email refers to a system of interconnected users who exchange messages based on a shared interest or topic.			I	C03
3F-3	In email communication, a _____ is a sequence of messages sent back and forth between users, often organized by subject or topic.			II	C03
3F-4	On platforms like message boards and email lists, discussions are often organized in _____, where responses are grouped together based on the conversation's topic or subject.			II	C03
3F-5	In _____ networks, interactions are often visible to a wide audience, with conversations flowing freely and in real time, such as those on Twitter.			I	C03
3F-6	The main feature of Twitter is its ability to allow users to post short, 280-character messages called _____, which can be shared with followers.			II	C03
3F-7	On Twitter, the use of _____ allows users to categorize and search for topics or trends that are being widely discussed.			I	C03
3F-8	Email lists are often used for _____, where members of a group can exchange information, ask questions, and share resources via email.			II	C03
3F-9	In Twitter, users can engage with content by liking, _____, or responding to tweets, which helps to increase visibility and promote conversation.			I	C04
3F-10	Thread networks in email and message boards allow for _____ of information across multiple users, providing a way for discussions to be stored and referenced over time.			III	C04
	Match The Following Questions				
3M-1		1. Email	A. Unsolicited or junk emails that are often irrelevant and sent in bulk.	I	C03
		2. Thread	A communication platform where users exchange short messages and		

			attachments.			
		3. Inbox	A series of messages sent in response to one another, often organized around a specific topic.			
		4. Spam	The folder in an email account where received messages are stored.			
3M-2		1. Thread Networks	A. A collection of email addresses used for communication within a specific group.		II	C03
		2. Message Board	A platform where users post questions or comments in a linear or topic-based format.			
		3. Email List	Represents the connections between users in a message board or email list.			
		4. Post	D. A message or comment contributed by a user in a message board or email list.			
3M-3		1. Tweet	A hashtag used to track or categorize topics on Twitter.		I	C04
		2. Hashtag	A short, text-based post shared by a user on Twitter, often including links, text, or media.			
		3. Retweet	C. A user who subscribes to receive updates from another user's account.			
		4. Follower	D. Sharing another user's tweet on your own profile.			
3M-4		1. Thread Network	A. Allows group communication via email, where everyone on the list receives the same message.		IV	C04
		2. Email List	A platform where users can interact with each other, post content, and engage in topic-based discussions.			
		3. Message Board	C. Where all incoming email messages are stored for a user to review and respond to.			
		4. Inbox	D. A method to share conversation threads and organize communication within a group.			
3M-5		1. Mention	A. A tweet that is directly responding to another tweet.		III	C04
		2. Hashtag	A feature that allows users to follow other accounts and receive updates.			
		3. Reply	A topic that is currently being widely discussed on Twitter			
		4. Trending Topic	A word or phrase preceded by a '#'			

			that helps categorize tweets and topics.		
3D-1	What is the history and definition of E-mail?			1	CO3
3D-2	What are the collections for analyzing and working with Email data?			1	CO3
3D-3	How can we import email networks into NodeXL?			3	CO3
3D-4	Write summery on Email Networks?			6	CO3
3D-5	How can you analyze personal E-mail networks?			1	CO3
3D-6	Write about threaded networks in E-mail?			1	CO3
3D-7	Explain about network analysis of community conversations?			2	CO3
3D-8	How can u analyze a technical support e-mail?			3	CO3
3D-9	Summarize the nuts and bolts of twitter?			6	CO4
3D-10	Write about the Ego network?			1	CO4
3D-11	Estimate how the email networks working with email data and cleaning those data in NodeXL.(Dec 23)			V	CO4
3D-12	Mention the key properties of threaded conversation and analyze the threaded conversation in the reply network.(Dec 23)			II	CO4
UNIT IV					
Multiple Choice Questions					Course Outcome
4C-1	What is the main function of visualizing Facebook networks in social network analysis? a) To display personal information about users b) To understand how individuals are connected to each other in the network c) To track the popularity of posts d) To rank users based on their activity level			I	CO5
4C-2	What type of data is typically analyzed when studying Facebook networks? a) User engagement statistics (likes, comments, shares) b) The number of advertisements seen by a user c) The physical locations of users d) The time spent on the platform			II	CO5
4C-3	In Facebook network analysis, what does a "node" represent? a) A connection between two users b) A specific post or piece of content			I	CO5

	c) A user or individual in the network d) The total number of interactions		
4C-4	What is an "edge" in the context of Facebook networks? a) A graphic used to enhance user profiles b) A connection between two users, like a friend request or interaction c) A tool to report harmful content d) A visual representation of user data	II	CO5
4C-5	Which of the following metrics would you use to measure the importance of a user in a Facebook network? a) Degree centrality b) Page views c) Number of advertisements seen d) Number of emojis used	I	CO5
4C-6	How does visualizing a Facebook network help in understanding community structures? a) By showing the geographical locations of users b) By grouping users based on common interests, interactions, or shared connections c) By predicting future behavior based on past posts d) By measuring the number of advertisements clicked	II	CO5
4C-7	Which type of layout is typically used to display Facebook networks for easier analysis? a) Grid layout b) Circular layout c) Force-directed layout d) Hierarchical layout	I	CO5
4C-8	When interpreting Facebook networks, what role does "clustering" play? a) It helps to identify individual user behavior patterns b) It groups users based on geographic proximity c) It identifies subgroups or communities within the larger network d) It ranks users by their number of friends	II	CO5
4C-9	What is a key characteristic of WWW (World Wide Web) hyperlink networks? a) They are only composed of text-based data b) They are typically private and not publicly accessible c) They represent social connections between individuals d) They consist of web pages connected by hyperlinks	I	CO5
4C-10	How are nodes and edges defined in WWW hyperlink networks? a) Nodes are websites, and edges are the links connecting these websites b) Nodes are individual users, and edges are the comments on websites c) Nodes represent images, and edges represent captions d) Nodes are advertisements, and edges are the number of clicks	III	CO5
4C-11	Which of the following algorithms is commonly used to analyze hyperlink networks and identify influential web pages? a) Dijkstra's Algorithm b) PageRank Algorithm c) K-means Clustering	II	CO5

	d) Floyd-Warshall Algorithm		
4C-12	How can hyperlink networks help improve search engine rankings? a) By tracking the number of times a page is viewed b) By focusing only on the number of images on a website c) By identifying the most visited geographic locations d) By analyzing the number and quality of inbound and outbound links to a page	III	C05
4C-13	What is the purpose of a "hub" in a hyperlink network? a) To connect to many other web pages, often acting as a central point for link navigation b) To store information about visitors to the website c) To host multimedia content such as images and videos d) To limit the number of outbound links to avoid penalties from search engines	I	C05
4C-14	What does the "in-degree" of a node in a hyperlink network represent? a) The number of outbound links from the node (web page) b) The total number of visitors to the node c) The number of inbound links pointing to the node d) The number of comments or interactions on the page	III	C05
4C-15	What challenge does the visualization of WWW hyperlink networks pose? a) Hyperlink networks are too small to analyze effectively b) Websites do not provide enough data for analysis c) Hyperlinks cannot be used to connect web pages in an effective way d) The data may be too complex, making it hard to display and interpret all connections clearly	IV	C05
Filling The Blank Questions			
4F-1	In Facebook networks, a _____ represents an individual user, organization, or group within the network.	I	C05
4F-2	In Social Network Analysis (SNA), the connections between nodes in a Facebook network are represented as _____, which indicate relationships such as "friendship" or "follow."	I	C05
4F-3	The _____ layout is commonly used to visualize Facebook networks because it arranges nodes based on forces of attraction and repulsion, revealing the structure of the network.	II	C05
4F-4	In the context of Facebook network analysis, _____ centrality measures the importance of a node based on how many other nodes it is directly connected to.	II	C05
4F-5	The _____ metric in Facebook networks measures how quickly a user (node) can connect with others through a small number of intermediaries, revealing their efficiency in communication.	I	C05
4F-6	A key feature of WWW hyperlink networks is that they are composed of	II	C05

	_____, where websites are linked together through hyperlinks.				
4F-7	In WWW hyperlink networks, an edge represents a _____, which is a link from one webpage to another on the internet.			I	CO5
4F-8	The _____ algorithm is commonly used to rank web pages based on the number and quality of links pointing to them, helping determine their prominence in search engines.			II	CO5
4F-9	In hyperlink networks, the _____ centrality of a web page (node) refers to how many incoming links (backlinks) it has, indicating its popularity or authority.			I	CO5
4F-10	The purpose of visualizing WWW hyperlink networks is to understand how web pages are connected and how _____ can influence the flow of information on the internet.			III	CO5
	Match The Following Questions				
4M-1		List I	List II	I	CO5
		1. Node	A. The visual representation of connections between users or groups on Facebook.		
		2. Edge	B. A representation of an individual user or group in a Facebook network.		
		3. Community	C. Measures the number of direct connections a user (node) has with others.		
		4. Degree Centrality	D. A group of connected users that interact more frequently within the network than with others.		
4M-2		1. Force-Directed Layout	A. A node that has the highest number of direct connections in the network.	II	CO5
		2. Cluster	Helps arrange nodes based on distance or proximity from other nodes in a radial pattern.		
		3. Facebook Friendship	Grouping nodes into subgroups based on shared interactions or characteristics.		
		4. Central Node	D. Represents the edges that connect two nodes who are friends or have mutual relationships		
4M-3		1. Node	A. Measures the number of links a webpage has directed to other pages.	I	CO5
		2. Hyperlink	B. A webpage that is connected to others via hyperlinks.		
		3. In-degree Centrality	C. Measures the number of incoming links (backlinks) to a specific		

			webpage.			
		4. Out-degree Centrality	D. A link or connection from one webpage to another within the web.			
4M-4		1. Betweenness Centrality	A. Measures the importance of a node based on how often it lies between other nodes in the shortest path.		IV	CO5
		2. Closeness Centrality	B. Identifies groups or subgroups of nodes within the network that are more densely connected to each other.			
		3. Community Detection	C. Measures how close a node is to all other nodes in the network.			
		4. Eigenvector Centrality	D. Measures the influence of a node based on the number and quality of its connections.			
4M-5		1. PageRank	A. A method of automatically navigating the web to collect data about web pages and their relationships.		V	CO4
		2. Link Analysis	B. A method for determining the importance of web pages by analyzing the incoming links (backlinks) to a page.			
		3. Outbound Link	C. A link from a webpage to another page or external resource.			
		4. Web Crawling	D. The process of examining relationships between web pages through hyperlinks to understand structure and relevance.			
4D-1	How can u create basic face book visualization?				III	CO5
4D-2	Describe the history of facebook?				II	CO5
4D-3	Why we map a facebook network?				IV	CO5
4D-4	Write summery on ordered and non ordered data and attributes in facebook network?				VI	CO5
4D-5	How can you create a basic facebook visualization?				I	CO5

4D-6	Write about theory of hyperlinking?	I	CO5
4D-7	Explain about import network?	II	CO5
4D-8	Describe the voson data provider in hyperlink networks?	II	CO5
4D-9	How can u construct your own hyperlink networks using the VOSON data provider?	III	CO5
4D-10	What kind of network is a facebook friendship network?	I	CO5
4D-11	Construct a model for promoting a product over various E-Commerce applications.(Dec 23)	III	CO5
4D-12	Identify the ways of working with the Hyperlinks through the facebook social media.(Dec 23)	III	CO5

UNIT V

Multiple Choice Questions			Course Outcome
5C-1	What is one of the key factors that influences content interaction on YouTube? a) The quality of video editing b) The number of advertisements on the video c) The number of views, likes, and comments a video receives d) The amount of time a video is stored on YouTube	I	CO6
5C-2	What does YouTube's algorithm typically prioritize when recommending videos to users? a) The upload date of videos b) The number of comments on a video c) User engagement metrics, such as watch time and likes d) The number of ads shown in a video	II	CO6
5C-3	Which of the following is an example of a "prominent" YouTube content creator? a) A user with few subscribers who posts occasionally b) A user with millions of subscribers and high engagement rates c) A user who only watches videos but does not upload content d) A user who posts random, non-related videos	I	CO6
5C-4	What is a common pattern of interaction among YouTube viewers? a) Viewers tend to watch videos in isolation without interacting with others b) Viewers rarely interact with content and only view videos passively c) Viewers prefer long, unskipped ads over content d) Viewers often like, comment, and share videos, which increases their visibility	II	CO6
5C-5	Which factor is most likely to result in a YouTube video becoming viral? a) It receives a high volume of likes, shares, and comments within a short period b) The video's length is under one minute	I	CO6

	c) The video is posted by a channel with no subscribers d) The video contains a large number of advertisements		
5C-6	What term refers to the prominence of certain types of content on YouTube based on user interaction patterns? a) Content ranking b) Content clustering c) Content virality d) Content personalization	II	CO6
5C-7	How does YouTube's recommendation algorithm impact content prominence? a) It randomly suggests videos to users b) It filters out content based on video length c) It only suggests videos from the most recent uploads d) It increases visibility for videos that users engage with frequently	I	CO6
5C-8	What is the primary purpose of Wiki networks like Wikipedia? a) To allow users to upload and view videos b) To facilitate collaborative creation and editing of knowledge c) To share and stream live content d) To allow users to create private blogs	II	CO6
5C-9	In Wiki networks, what does the term "collaboration" refer to? a) The collective effort of users to create, edit, and maintain content together b) The process of users uploading videos to share with others c) The communication between users through private messages d) The act of commenting on existing articles without contributing new content	I	CO6
5C-10	Which of the following is an example of a network characteristic in Wiki platforms? a) Articles that are continuously edited by different users b) A single user writing and maintaining an article alone c) Users who contribute only to personal blogs d) The ability to restrict editing to a specific group of people	III	CO6
5C-11	What is a key feature of the collaborative process in Wiki networks? a) Only a few experts contribute content to the platform b) All users are restricted from making edits to pages c) Content is continuously updated by various users with different perspectives d) Users can only contribute by creating new articles from scratch	II	CO6
5C-12	What is an example of how creativity is supported in Wiki networks? a) The ability for any user to edit or add to existing articles with new ideas or insights b) The restriction of content to only published, professional writers c) Users can only contribute to content through private messages d) Articles are locked and cannot be edited after they are published	III	CO6
5C-13	Which of the following best describes a "wikilink" in a Wiki network? a) A link that leads to a discussion forum b) A list of users who have contributed to the page c) A direct message from one user to another d) A hyperlink embedded in a page that connects to another page within the same network	I	CO6

5C-14	Which metric is often used to measure the success or quality of a Wiki network like Wikipedia? a) The frequency of edits and updates made to a page b) The number of views a page receives c) The number of advertisements displayed on the page d) The average time users spend reading each page	III	CO6
5C-15	How do Wiki networks promote knowledge-sharing and creativity among users? a) By allowing only experts to contribute content b) By enabling any user to edit, update, and share information collaboratively c) By restricting content contributions to a select group of users d) By focusing only on paid contributors to ensure content quality	V	CO6
Filling The Blank Questions			
5F-1	On YouTube, content creators with millions of subscribers and high engagement rates are often considered to be _____ in the network.	I	CO6
5F-2	One key metric for measuring the success of a YouTube video is the _____, which shows how many people have watched the video.	I	CO6
5F-3	YouTube uses an algorithm that recommends videos based on user _____, such as likes, shares, and comments.	II	CO6
5F-4	A common pattern on YouTube is the _____ of content, where videos with high engagement (likes, shares, comments) are promoted to more users.	II	CO6
5F-5	In YouTube's network, content that consistently attracts attention is likely to have _____ content interaction patterns, resulting in wider visibility.	I	CO6
5F-6	Wiki networks, like Wikipedia, are collaborative spaces where users contribute to articles by adding, editing, or refining _____.	II	CO6
5F-7	In a Wiki network, the idea of _____ refers to the ongoing process of editing and updating content based on collective input from different users.	I	CO6
5F-8	Wiki networks encourage creativity by allowing users to freely contribute and edit articles, making it possible to generate a vast amount of _____ on various topics.	II	CO6
5F-9	The key characteristic of a _____ network in the context of Wiki systems is the ability for anyone to create, edit, and link to articles, fostering continuous collaboration.	I	CO6
5F-10	One of the most important features of Wiki networks is the use of _____ to organize articles, allowing users to navigate topics and related content easily.	III	CO6
Match The Following Questions			
5M-1	List I	List II	I CO6
	1. YouTube Video	A. A brief interaction between users or content creators, often sharing opinions or reactions.	
	2. Comments Section	B. An area where viewers can leave feedback	

		or discussions about a video.			
	3. Likes and Dislikes	C. Indicators of how well a video is received by its audience.			
	4. Channel	D. A creator's personal page, where they post content and interact with their audience.			
5M-2	List I	List II		II	CO6
	1. Content Prominence	A. Content that spreads rapidly due to its high viewership and engagement.			
	2. Viewer Engagement	B. Metrics such as comments, likes, shares, and subscriptions that show how much users interact with content.			
	3. Viral Video	C. The process of a video becoming widely shared, commented on, and liked			
	4. Subscriber Growth	D. The increase in the number of people following a channel over time, based on video popularity.			
5M-3	List I	List II		I	CO6
	1. Wiki Pages	1. The ability for anyone to modify or add to the content on a Wiki.			
	2. Collaborative Editing	2. A system where multiple users contribute to the content and refine each other's work.			
	3. Open Editing	3. Pages that are frequently edited and updated by multiple users.			
	4. Content History	4. A record of changes made to a page, allowing users to see previous versions and updates.			
5M-4	List I	List II		V	CO6
	1. Wiki Communities	1. The process where other users check, critique, and suggest improvements to a Wiki entry.			
	2. User Contribution	2. The practice of contributing expertise, resources, and information for the benefit of a community.			
	3. Knowledge Sharing	3. A group of users who collaborate on a shared interest by creating and editing content on a Wiki.			
	4. Peer Review	4. The act of adding new content, editing existing content, or providing sources and references.			
5M-5	List I	List II		VI	CO6
	1. Edit Frequency	1. Tracks how many times a particular page is viewed, indicating its relevance or popularity.			
	2. Page Views	2. Measures the variety of topics covered across different Wiki pages.			
	3. Collaboration Level	3. Measures how much interaction occurs between users in creating or editing content.			

	4. Content Diversity	4. Measures how often a user or group of users contribute or revise content on the Wiki.		
5D-1	Describe Youtube structure?		II	CO6
5D-2	Summarize networks in youtube?		VI	CO6
5D-3	How to import youtube data into NodeXL?		III	CO6
5D-4	Write about analyzing youtube networks?		I	CO6
5D-5	What are the key features of wiki systems?		I	CO6
5D-6	How can u prepare youtube network data?		III	CO6
5D-7	Summarize on wiki networks from edit activity?		VI	CO6
5D-8	Describe Healthcare reform youtube video networks?		II	CO6
5D-9	Write about NodeXL visualization strategies for revealing distinct user types?		I	CO6
5D-10	How can you identify different types of editors within a wiki project?		III	CO6
5D-11	Build a network in YouTube and import YouTube data into NodeXL.(Dec 23)		III	CO6
5D-12	Compare the cultural differences in wikis through the use of content analysis methods to investigate the behavior of wiki participants.(Dec 23)		II	CO6



IV B.Tech - I Semester - I Mid Term Examination, Sept.-2023

(R20CSM4107) SOCIAL NETWORK ANALYSIS

(For AIML)

Duration: 90 Mins

Dt: 08-09-2023, Day-4 (AN)

Max Marks: 25M

Section – A

Answer All the questions

Marks: 5Qx1M = 5M

*** (I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating, and VI-Creating.)**

*Blooms Taxonomy Levels	Course Outcomes
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- | | | |
|---|----|-----|
| 1. Define Social Networks. | I | CO1 |
| 2. List out the Social Network Analysis Measures. | IV | CO1 |
| 3. What are the types of layout? | II | CO2 |
| 4. What is closeness centrality? | I | CO2 |
| 5. What are E-mail Networks? | I | CO3 |

Section – B

Answer any FOUR questions

Marks: 4Qx5M = 20M

- | | | |
|---|-----|-----|
| 6. Differentiate between microscopic and macroscopic networks. | IV | CO1 |
| 7. Briefly Explain degree distribution of a node with examples. | V | CO1 |
| 8. How can we start NodeXL with examples? | III | CO2 |
| 9. Explain about how to create clusters manually. | IV | CO2 |
| 10. How can u automatically identify clusters? | III | CO2 |
| 11. What are the collections for analyzing and working with Email data? | I | CO3 |
-

**IV B.Tech - I Semester - II Mid Term Examination, November-2023****(R20CSM4107) SOCIAL NETWORK ANALYSIS****(For AIML)****Duration: 90 Mins****Dt: 15-11-2023, Day-2 (AN)****Max Marks: 25M****Section – A****Answer All the questions****Marks: 5Qx1M = 5M***** (I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating, and VI-Creating.)**

<u>*Blooms</u> <u>Taxonomy</u> <u>Levels</u>	<u>Course</u> <u>Outcomes</u>
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- | | | |
|--|-----|-----|
| 1. Define #hashtags. | I | CO4 |
| 2. Define non-ordered data. | I | CO5 |
| 3. What is blog? | I | CO5 |
| 4. How can u import video data in YouTube? | III | CO6 |
| 5. What are the features of wiki systems? | I | CO6 |

Section – B**Answer any FOUR questions****Marks: 4Qx5M = 20M**

- | | | |
|---|-----|-----|
| 6. Explain about network analysis of community conversations. | II | CO4 |
| 7. Explain about import network. | II | CO5 |
| 8. What kind of network is a face book friendship network? | I | CO5 |
| 9. Summarize networks in YouTube. | VI | CO6 |
| 10. How to import YouTube data into NodeXL? | III | CO6 |
| 11. Summarize on wiki networks from edit activity. | VI | CO6 |

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SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi) - Recognized under 2(f) and 12(B) of UGC Act 1956

IV B.Tech. I Semester (REGULAR) End Examinations, December - 2023.

(R20CSM4107) SOCIAL NETWORK ANALYSIS

07/12/2023

Duration: 3 Hrs

(For AIML)

Day- 4 (FN)

Maximum Marks: 70M

Blooms Taxonomy : (I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating and VI-Creating)

Course Outcomes : CO

Answer ALL the following questions.

SECTION-A

1. List the social media systems and categorize each with examples. (5Qx 4M = 20M)
I CO1
2. Describe the voting patterns of U.S. senators by identifying clusters of senators connected together based on similar voting patterns. I CO2
3. Summarize several ways of filtering while importing email networks into NodeXL. II CO3
4. Compare vertex-level analysis and cluster-level analysis. II CO4
5. Outline the metadata about the YouTube video. II CO5

Answer FIVE questions choosing at least one from each unit.

SECTION - B

6. Analyze in detail about the Social Networks and Personal Networks. (5Qx10M = 50M)
UNIT-I
(OR)
IV CO1
7. Examine the network analysis metrics. UNIT-II
(OR)
IV CO1
8. Illustrate the working principle of NodeXL files. II CO2
9. Explain the role of visualization and show the visual representation methods for visualizing social networks. II CO2
10. Estimate how the email networks working with email data and cleaning those data in NodeXL. UNIT-III
(OR)
V CO3
11. Mention the key properties of threaded conversation and analyze the threaded conversation in the reply network. II CO4
12. Construct a model for promoting a product over various E-Commerce applications. UNIT-IV
(OR)
III CO4
13. Identify the ways of working with the Hyperlinks through the Facebook social media. UNIT-V
(OR)
III CO5
4. Build a network in YouTube and import YouTube data into NodeXL. II CO5
5. Compare the cultural differences in wikis through the use of content analysis methods to investigate the behavior of wiki participants.
