

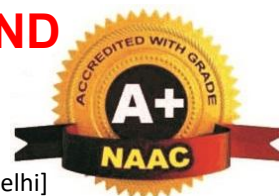


VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

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Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301. Phone: 96529 10002/3



COMPUTER SCIENCE & ENGINEERING (DATA SCIENCE)

VR24 – IV B.Tech I Semester : Course Outcomes & CO-PO/PSO Mapping

DS701PC: PREDICTIVE ANALYTICS

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

CO.No.	COURSE OUTCOMES	BT Level
CO1	Understand the complete processing steps involved in predictive analytics	2
CO2	Develop the ability to construct, evaluate, and deploy predictive models responsibly	6
CO3	Gain knowledge of machine learning, data mining, and ensemble techniques for prediction	2
CO4	Apply predictive analytics techniques to real-world problem scenarios	3
CO5	Perform data preprocessing and feature engineering for effective predictive modeling	3

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	-	1	2	-	-	-	-	-	-	3	2	2
CO2	3	3	3	2	3	-	-	1	-	-	-	3	3	3
CO3	3	2	1	2	2	-	-	-	-	-	-	3	3	2
CO4	2	3	2	3	3	-	-	-	-	-	-	3	3	3
CO5	2	3	2	3	3	-	-	-	-	-	-	3	3	3
Average	2.6	2.6	2.0	2.2	2.6	-	-	1.0	-	-	-	3.0	2.8	2.6

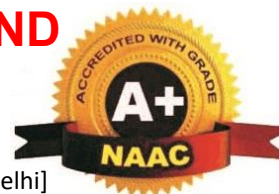


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DS702PC: WEB AND SOCIAL MEDIA ANALYTICS

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

CO.No.	COURSE OUTCOMES	BT Level
CO1	Understand the fundamentals of decision support systems.	2
CO2	Apply natural language processing techniques for text analytics.	3
CO3	Use web analytics and search engine optimization techniques.	3
CO4	Analyze and interpret sentiments from textual data.	4
CO5	Apply social media and social network analytics for decision-making.	3

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	-	1	2	-	-	-	-	-	-	3	2	2
CO2	2	3	2	2	3	-	-	-	-	-	-	3	3	2
CO3	2	2	2	2	3	-	-	-	-	-	-	2	3	2
CO4	2	3	2	3	3	-	-	-	-	-	-	3	3	3
CO5	2	3	2	3	3	-	-	-	-	-	-	3	3	3
Average	2.2	2.6	2.0	2.2	2.8	-	-	-	-	-	-	2.8	2.8	2.4

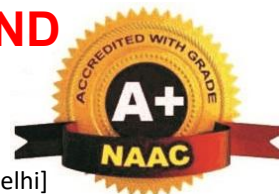


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PROFESSIONAL ELECTIVE – IV

DS741PE: QUANTUM COMPUTING

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Understand basics of quantum computing .	2
CO2	Understand physical implementation of Qubit .	2
CO3	Understand Quantum algorithms and their implementation.	2
CO4	Understand The Impact of Quantum Computing on Cryptography Apply social media and social network analytics for decision-making	2
CO5	Analyze the security implications of quantum computing.	4

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	-	-	2	-	-	-	-	-	-	3	2	2
CO2	3	2	1	1	2	-	-	-	-	-	-	3	2	2
CO3	3	3	2	2	3	-	-	-	-	-	-	3	3	2
CO4	2	3	1	2	2	1	-	2	-	-	-	2	3	2
CO5	2	3	2	3	2	1	-	3	-	-	-	2	3	3
Average	2.6	2.6	1.5	2.0	2.2	1.0	-	2.5	-	-	-	2.6	2.6	2.2

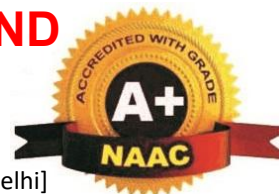


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PROFESSIONAL ELECTIVE – IV

DS742PE: DATABASE SECURITY

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Identify database security problems	2
CO2	Implement different security models	3
CO3	Provide security for software design	3
CO4	Protect object-oriented systems	3
CO5	Handle security issues for active databases	4

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	-	1	2	-	-	1	-	-	-	3	2	2
CO2	2	3	2	2	3	-	-	1	-	-	-	3	3	2
CO3	2	2	3	2	2	-	-	1	-	-	-	3	3	2
CO4	2	3	2	2	3	-	-	1	-	-	-	3	3	3
CO5	2	3	2	3	3	-	-	1	-	-	-	3	3	3
Average	2.2	2.6	2.3	2.0	2.6	-	-	1.0	-	-	-	3.0	2.8	2.4

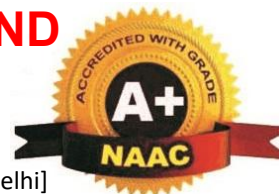


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PROFESSIONAL ELECTIVE – IV

DS743PE: NATURAL LANGUAGE PROCESSING

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Show sensitivity to linguistic phenomena and an ability to model them with formal grammars.	4
CO2	Understand and carry out proper experimental methodology for training and evaluating empirical NLP systems	3
CO3	Able to manipulate probabilities, construct statistical models over strings and trees, and estimate parameters using supervised and unsupervised training methods.	6
CO4	Able to design, implement, and analyze NLP algorithms; and design different language modeling Techniques. Analyze the security implications of quantum computing.	6
CO5	Apply NLP techniques to analyze and process natural language data.	3

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	1	2	2	-	-	-	-	-	-	3	2	2
CO2	2	3	2	3	3	-	-	-	-	-	-	3	3	2
CO3	3	3	3	2	3	-	-	-	-	-	-	3	3	3
CO4	3	3	3	3	3	-	-	-	-	-	-	3	3	3
CO5	2	3	2	3	3	-	-	-	-	-	-	3	3	3
Average	2.6	2.8	2.2	2.6	2.8	-	-	-	-	-	-	3.0	2.8	2.6

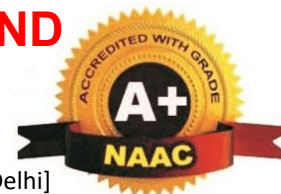


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PROFESSIONAL ELECTIVE – IV

DS744PE: INFORMATION STORAGE MANAGEMENT

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Understand the evolution of storage technology and Intelligent Storage Systems	2
CO2	Explore the key concepts of various Storage Networking Technologies - DAS, SANs, NAS and CAS.	2
CO3	Understand the basics of Storage Virtualization.	2
CO4	Understand the concepts of Storage security and Storage Infrastructure Management.	2
CO5	Analyze the purpose of backup, recovery and replication Strategies.	4

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	-	-	2	-	-	-	-	-	-	3	2	2
CO2	3	3	1	2	3	-	-	-	-	-	-	3	3	2
CO3	2	2	2	2	3	-	-	-	-	-	-	3	3	2
CO4	2	3	2	2	3	-	-	1	-	-	-	3	3	3
CO5	2	3	2	3	3	-	-	1	-	-	-	3	3	3
Average	2.4	2.6	1.4	1.8	2.8	-	-	1.0	-	-	-	3.0	2.8	2.4

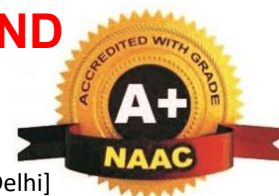


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PROFESSIONAL ELECTIVE – IV

DS745PE: INTERNET OF THINGS

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Interpret the impact and challenges posed by IoT networks leading to new architectural models.	4
CO2	Compare and contrast the deployment of smart objects and the technologies to connect them to network.	4
CO3	Appraise the role of IoT protocols for efficient network communication.	5
CO4	Identify the applications of IoT in Industry.	2
CO5	Understand the applications and impact of IoT in real-world scenarios.	2

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	-	-	-	-	-	-	3	2	2
CO2	3	3	2	2	3	-	-	-	-	-	-	3	3	2
CO3	3	3	2	3	3	-	-	-	-	-	-	3	3	3
CO4	2	2	2	2	3	-	-	-	-	-	-	3	3	2
CO5	2	2	1	2	2	1	-	1	-	-	-	2	3	3
Average	2.6	2.6	1.8	2.2	2.6	1.0	-	1.0	-	-	-	2.8	2.8	2.4

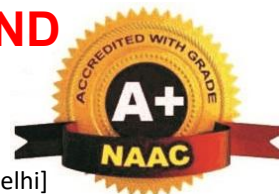


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PROFESSIONAL ELECTIVE – V

DS751PE: PRIVACY PRESERVING DATA PUBLISHING

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Understand the concepts of Privacy Preserving Data Mining Models and Algorithms.	2
CO2	Demonstrate a comprehensive understanding of different tasks associated in Inference Control Methods for Privacy-Preserving Data Mining.	2
CO3	Understand the concepts of Data Anonymization Methods and its Measures .	2
CO4	Evaluate and Appraise the solution designed for Multiplicative Perturbation.	5
CO5	Formulate, Design and Implement the solutions for Utility-based Privacy Preserving Data.	6

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	1	1	2	-	-	2	-	-	-	3	2	2
CO2	3	3	2	2	2	-	-	2	-	-	-	3	3	2
CO3	2	3	2	2	3	-	-	3	-	-	-	3	3	2
CO4	2	3	3	3	3	-	-	2	-	-	-	3	3	3
CO5	2	3	3	3	3	-	-	2	-	-	-	3	3	3
Average	2.4	2.8	2.2	2.2	2.6	-	-	2.2	-	-	-	3.0	2.8	2.4

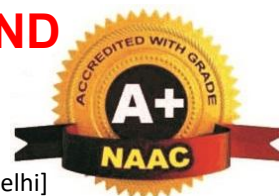


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PROFESSIONAL ELECTIVE – V

DS752PE: CLOUD COMPUTING

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Understand different computing paradigms and potential of the paradigms and specifically cloud computing	2
CO2	Understand cloud service types, cloud deployment models and technologies supporting and driving the cloud	2
CO3	Acquire the knowledge of programming models for cloud and development of software application that runs the cloud and various services available from major cloud providers	3
CO4	Understand the security concerns and issues in cloud computing	2
CO5	Acquire the knowledge of advances in cloud computing.	2

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	-	1	2	-	-	-	-	-	-	3	2	2
CO2	3	3	1	2	3	-	-	-	-	-	-	3	3	2
CO3	3	3	3	2	3	-	-	-	-	-	-	3	3	3
CO4	2	3	2	3	3	-	-	2	-	-	-	3	3	2
CO5	2	2	1	2	2	-	-	1	-	-	-	2	3	3
Average	2.6	2.6	1.4	2.0	2.6	-	-	1.5	-	-	-	2.8	2.8	2.4

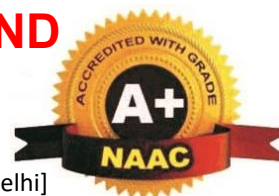


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PROFESSIONAL ELECTIVE – V

DS753PE: DATA SCIENCE APPLICATIONS

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

CO .No.	COURSE OUTCOMES	BT Level
CO1	Correlate data science and solutions to modern problems.	4
CO2	Decide when to use which type of technique in data science.	5
CO3	Correlate data science techniques with real-world problems	4
CO4	Decide appropriate methods and tools for specific data science tasks	5
CO5	Apply data science approaches to analyze and optimize data in various domains	3

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	-	-	-	-	-	-	3	2	2
CO2	3	3	2	3	3	-	-	-	-	-	-	3	3	3
CO3	3	3	2	3	3	-	-	-	-	-	-	3	3	3
CO4	2	3	3	3	3	-	-	-	-	-	-	3	3	3
CO5	3	3	3	3	3	-	-	-	-	-	-	3	3	3
Average	2.8	3.0	2.4	2.8	2.8	-	-	-	-	-	-	3.0	2.8	2.8

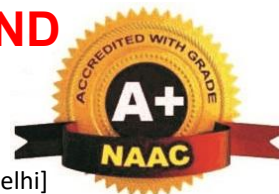


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PROFESSIONAL ELECTIVE – V

DS754PE: MINING MASSIVE DATASETS

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Handle massive data using MapReduce.	3
CO2	Develop and implement algorithms for massive data sets and methodologies in the context of data mining.	6
CO3	Understand the algorithms for extracting models and information from large datasets.	2
CO4	Develop recommendation systems.	6
CO5	Gain experience in matching various algorithms for particular classes of problems.	5

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	2	2	3	-	-	-	-	-	-	3	2	2
CO2	3	3	3	3	3	-	-	-	-	-	-	3	3	3
CO3	3	3	2	3	3	-	-	-	-	-	-	3	3	3
CO4	2	3	3	3	3	-	-	-	-	-	-	3	3	3
CO5	2	3	2	3	3	-	-	-	-	-	-	3	3	3
Average	2.6	2.8	2.4	2.8	3.0	-	-	-	-	-	-	3.0	2.8	2.8

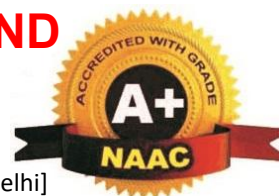


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PROFESSIONAL ELECTIVE – V

DS755PE: EXPLORATORY DATA ANALYSIS

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Apply the Epicycle of Analysis process effectively.	3
CO2	Articulate and refine data-related questions using the Epicycle approach.	4
CO3	Perform systematic data exploration, validation, and visualization to understand data characteristics.	3
CO4	Develop the skills necessary to use formal modeling techniques for data inference.	6
CO5	Apply data analysis and modeling techniques to extract meaningful insights.	3

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	-	-	-	-	-	-	3	2	2
CO2	3	3	2	3	3	-	-	-	-	-	-	3	3	2
CO3	3	3	2	3	3	-	-	-	-	-	-	3	3	3
CO4	3	3	3	3	3	-	-	-	-	-	-	3	3	3
CO5	3	3	3	3	3	-	-	-	-	-	-	3	3	3
Average	3.0	3.0	2.4	2.8	2.8	-	-	-	-	-	-	3.0	2.8	2.6

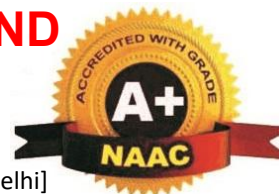


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OPEN ELECTIVE – II

DS721OE: DATA MINING

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Understand the need of data mining and pre-processing techniques.	2
CO2	Perform market basket analysis using association rule mining.	3
CO3	Utilize classification techniques for analysis and interpretation of data.	3
CO4	Identify appropriate clustering and outlier detection techniques to handle complex data.	4
CO5	Understand the mining of data from web, text and time series data.	2

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	1	2	2	-	-	-	-	-	-	3	2	2
CO2	3	3	2	2	3	-	-	-	-	-	-	3	3	3
CO3	3	3	2	3	3	-	-	-	-	-	-	3	3	3
CO4	2	3	2	3	3	-	-	-	-	-	-	3	3	3
CO5	2	2	1	2	2	-	-	-	-	-	-	3	2	2
Average	2.6	2.6	1.6	2.4	2.6	-	-	-	-	-	-	3.0	2.6	2.6

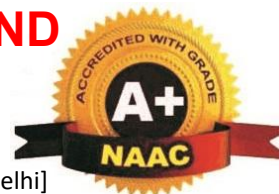


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OPEN ELECTIVE – II

DS722OE: DATA ANALYTICS

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Understand the impact of data analytics for business decisions and strategy	2
CO2	Carry out data analysis/statistical analysis	3
CO3	To carry out standard data visualization and formal inference procedures	3
CO4	Design Data Architecture	6
CO5	Understand various Data Sources	2

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	1	2	2	2	-	-	-	-	-	2	3	2
CO2	3	3	2	3	3	2	-	-	-	-	-	2	3	3
CO3	3	3	2	3	3	1	-	-	-	-	-	2	3	3
CO4	2	2	3	2	3	1	-	-	-	-	-	2	3	3
CO5	2	2	1	2	2	1	-	-	-	-	-	2	2	2
Average	2.6	2.4	1.8	2.4	2.6	1.4	-	-	-	-	-	2.0	2.8	2.6

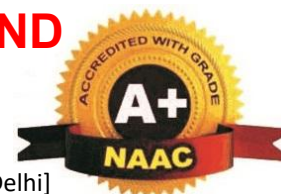


VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

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Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301. Phone: 96529 10002/3



LABORATORIES

DS703PC: PREDICTIVE ANALYTICS LAB

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Understand the processing steps for predictive analytics	2
CO2	Construct and deploy prediction models with integrity	6
CO3	Explore various techniques (machine learning/data mining, ensemble) for predictive analytics.	2
CO4	Apply predictive analytics to real world examples.	3
CO5	Extract meaningful insights from data to support informed decision-making	4

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	1	2	2	-	-	-	-	-	-	3	3	2
CO2	3	3	3	2	3	-	-	1	-	-	-	3	3	3
CO3	3	3	2	2	3	-	-	-	-	-	-	3	3	3
CO4	3	3	2	3	3	-	-	-	-	-	-	3	3	3
CO5	2	3	2	3	3	1	-	-	-	-	-	3	3	3
Average	2.8	2.8	2.0	2.4	2.8	1.0	-	1.0	-	-	-	3.0	3.0	2.8

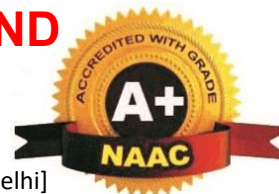


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DS704PC: WEB AND SOCIAL MEDIA ANALYTICS LAB

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

CO. No.	COURSE OUTCOMES	BT Level
CO1	Knowledge on decision support systems	2
CO2	Apply natural language processing concepts on text analytics	3
CO3	Understand sentiment analysis	2
CO4	Knowledge on search engine optimization and web analytics Extract meaningful insights from data to support informed decision-making	4
CO5	Apply web, text, and social media analytics techniques to analyze online data and support decision-making	3

MAPPING:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	2	-	-	2	-	-	-	-	-	2	3	2	-
CO2	3	3	2	2	3	-	-	-	-	-	2	3	3	2
CO3	3	2	-	2	2	-	-	-	-	2	-	3	2	2
CO4	3	2	2	2	3	-	-	-	-	2	3	3	3	2
CO5	3	3	3	3	3	-	-	-	2	2	3	3	3	3
Average	3.0	2.4	1.4	1.8	2.6	0	0	0	0.4	1.6	2.0	3.0	2.6	1.8