

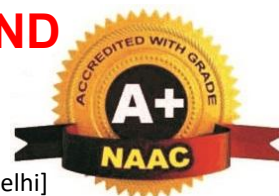


VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(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)

R22 – IV B.Tech I Semester : Course Outcomes & CO-PO/PSO Mapping

DS743PE: PREDICTIVE ANALYTICS

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

CO.No	COURSE OUTCOMES	BT Level
CO1	Understand the processing steps, types of analytics, and applications involved in setting up predictive analytics problems, including business understanding and identification of target variables.	2
CO2	Apply the concepts of prediction effect, model deployment, and measures of success to build predictive models with integrity, ethics, and responsibility.	3
CO3	Analyze and apply machine learning techniques such as decision trees, logistic regression, neural networks, kNN, and Bayesian methods to build regression and predictive models.	4
CO4	Evaluate the effect of model ensembles such as bagging, boosting, random forests, and stochastic gradient boosting in improving predictive model performance.	5
CO5	Apply predictive analytics techniques to real world case studies including survey analysis, question answering, text mining, and persuasion by numbers.	3

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	2	2						2		3	2	
CO2	3	2	3	2	2						2		3	2	2
CO3	3	3	3	3	2						3		3	3	
CO4	3	3	3	2	2						3		3	2	
CO5	3	2	3	3	2						2		3	2	2
Average	3	2.6	2.8	2.4	2						2.4		3	2.2	2

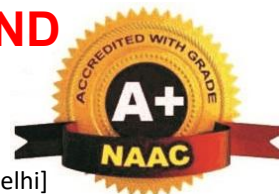


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DS702PC: WEB AND SOCIAL MEDIA ANALYTICS

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

CO. No	COURSE OUTCOMES	BT Level
CO1	Knowledge on decision support systems.	1
CO2	Apply natural language processing concepts on text analytics.	3
CO3	Understand sentiment analysis.	2
CO4	Knowledge on search engine optimization and web analytics.	1

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	2	2	2						2		3	3	2
CO3	3	2	2	2	2						2		3	2	
CO4	3	2	2	2	3						2		3	2	2
Average	3	2.3	2	2	2.3						2		3	2.3	2

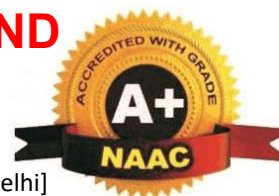


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PROFESSIONAL ELECTIVE – IV

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.	3
CO4	Understand the Impact of Quantum Computing on Cryptography.	4

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	2	2	2	2						2		3	2	
CO3	3	3	3	2	2						2		3	3	2
CO4	3	3	2	2	3						2		3	3	2
Average	3	2.5	2.3	2	2.3						2		3	2.5	2

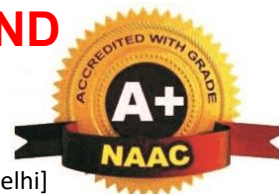


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PROFESSIONAL ELECTIVE – IV

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.	1
CO2	Implement different security models.	3
CO3	Provide security for software design.	3
CO4	Protect object-oriented systems.	4
CO5	Handle security issues for active databases.	5

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	2	3	2	2						2		3	2	2
CO3	3	2	3	2	2						2		3	2	
CO4	3	3	3	2	3						3		3	3	2
CO5	3	3	3	3	2						3		3	3	2
Average	3	2.4	2.8	2.2	2.2						2.4		3	2.4	2

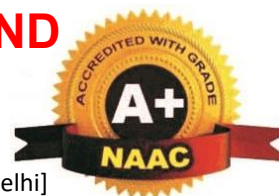


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PROFESSIONAL ELECTIVE – IV

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.	3
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.	3
CO4	Able to design, implement, and analyze NLP algorithms; and design different language modeling techniques.	4

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	2	2	2	2						2		3	2	2
CO3	3	3	3	2	2						2		3	3	2
CO4	3	3	3	3	2						3		3	3	2
Average	3	2.5	2.5	2.3	2						2.3		3	2.5	2

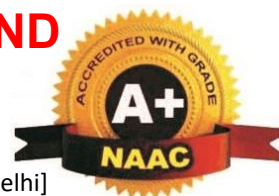


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PROFESSIONAL ELECTIVE – IV

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	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	2	2	3						2		3	2	2
CO3	3	2	2	2	2						2		3	2	
CO4	3	2	2	3	2						2		3	3	2
CO5	3	3	3	2	2						3		3	3	
Average	3	2.4	2.2	2.2	2.2						2.2		3	2.4	2

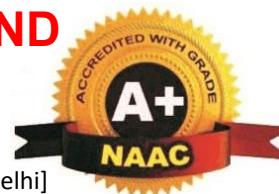


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PROFESSIONAL ELECTIVE – IV

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.	2
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.	1

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	3	2	3						2		3	2	2
CO3	3	3	2	2	2						2		3	3	2
CO4	3	2	2	2	3						2		3	2	
Average	3	2.5	2.3	2	2.5						2		3	2.3	2

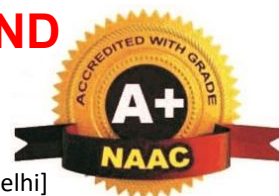


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PROFESSIONAL ELECTIVE – V

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.	3
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	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	2	2	2						2		3	2	2
CO3	3	2	2	2	2						2		3	2	
CO4	3	3	3	2	3						3		3	3	2
CO5	3	3	3	3	2						3		3	3	2
Average	3	2.6	2.4	2.2	2.2						2.4		3	2.4	2

PROFESSIONAL ELECTIVE – V

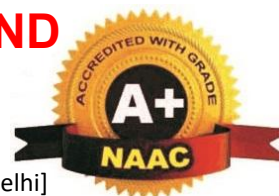


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DS752PE: CLOUD COMPUTING

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.	1

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	2	2	2	2						2		3	2	2
CO3	3	3	3	2	3						2		3	3	2
CO4	3	2	2	2	2						2		3	2	
CO5	3	2	2	2	2						2		3	2	
Average	3	2.2	2.2	2	2.2						2		3	2.2	2

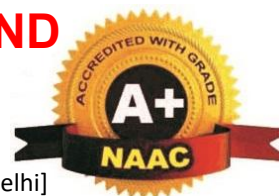


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PROFESSIONAL ELECTIVE – V

DS753PE: DATA SCIENCE APPLICATIONS

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

CO	COURSE OUTCOMES	BT Level
CO1	Explore data science applications across various domains, along with recommender systems, to identify challenges and opportunities for data scientists.	2
CO2	Analyze time series data and supply chain case studies to forecast stock market movements and solve real-world logistics problems.	4
CO3	Correlate data science techniques with applications in education and social media to provide solutions to modern problems.	4
CO4	Apply data science techniques to solve problems in healthcare and bioinformatics.	3
CO5	Decide and implement appropriate data optimization techniques using Python for real-world case studies.	5

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	2	3	2						2		3	3	2
CO3	3	3	2	3	2						2		3	3	2
CO4	3	2	3	2	2						2		3	2	2
CO5	3	3	3	2	2						3		3	3	2
Average	3	2.6	2.4	2.4	2						2.2		3	2.6	2

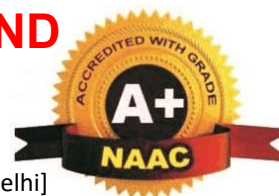


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PROFESSIONAL ELECTIVE – V

DS754PE: MINING MASSIVE DATASETS

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

CO.No	COURSE OUTCOMES	BT Level
CO1	Understand the fundamental concepts and challenges involved in mining massive datasets using practical algorithms.	2
CO2	Apply parallel algorithmic techniques to process and analyze large-scale massive datasets.	3
CO3	Analyze stream processing algorithms to handle data streams that arrive continuously.	4
CO4	Evaluate page ranking algorithms used for web search applications.	5
CO5	Design online advertisement systems using appropriate data mining and optimization techniques.	6

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	3	2	3						2		3	3	2
CO3	3	3	3	2	2						2		3	3	2
CO4	3	3	2	3	2						3		3	3	2
CO5	3	3	3	3	2						3		3	3	2
Average	3	2.8	2.6	2.4	2.2						2.4		3	2.8	2

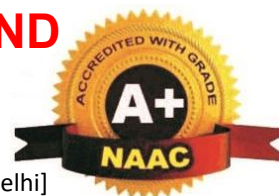


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PROFESSIONAL ELECTIVE – V

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.	3
CO3	Conduct Exploratory Data Analysis (EDA).	3
CO4	Develop the skills necessary to use formal modeling techniques for data inference.	5

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	2	2	2	2						2		3	2	2
CO3	3	3	2	2	3						2		3	3	2
CO4	3	3	3	2	2						3		3	3	2
Average	3	2.5	2.3	2	2.3						2.3		3	2.5	2

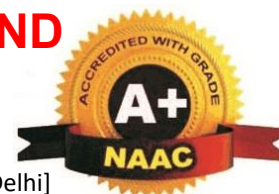


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PROFESSIONAL ELECTIVE – VI

DS861PE: DATA STREAM MINING

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

CO. No	COURSE OUTCOMES	BT Level
CO1	Understand how to formulate a knowledge extraction problem from data streams.	2
CO2	Ability to apply methods/algorithms to new data stream analysis problems.	3
CO3	Evaluate the results and understand the functioning of the methods studied.	5
CO4	Demonstrate decision tree and adaptive Hoeffding Tree concepts.	3
CO5	Analyze various mining strategies and algorithms used for real-time data stream processing.	4

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	2	2	3						2		3	3	2
CO3	3	3	3	2	2						3		3	3	2
CO4	3	2	3	2	3						2		3	3	2
CO5	3	3	3	2	2						3		3	3	2
Average	3	2.6	2.6	2	2.4						2.4		3	2.8	2

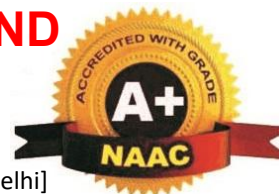


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OPEN ELECTIVE – II

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	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	2	2	3						2		3	3	2
CO3	3	3	3	2	2						2		3	3	2
CO4	3	3	3	2	2						3		3	3	2
CO5	3	2	2	2	2						2		3	2	
Average	3	2.6	2.4	2	2.2						2.2		3	2.6	2

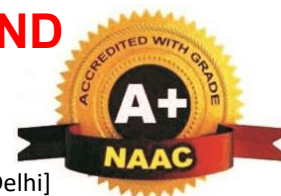


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OPEN ELECTIVE – II

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	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	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	2	2	3						2		3	3	2
CO3	3	2	3	2	3						2		3	3	2
CO4	3	3	3	3	2						3		3	3	2
CO5	3	2	2	2	2						2		3	2	
Average	3	2.4	2.4	2.2	2.4						2.2		3	2.6	2

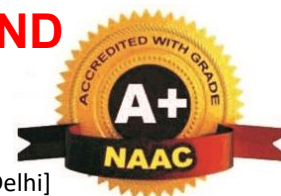


VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

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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.	3
CO3	Explore various techniques (machine learning/data mining, ensemble) for predictive analytics.	2
CO4	Apply predictive analytics to real world examples.	3
CO5	Evaluate the performance of predictive models built using tools such as Python, SPSS, SAS, R and Power BI.	5

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	3	2	3						2		3	3	2
CO3	3	2	2	2	2						2		3	2	
CO4	3	3	2	3	3						3		3	3	2
CO5	3	3	3	3	2						3		3	3	2
Average	3	2.6	2.4	2.4	2.4						2.4		3	2.6	2

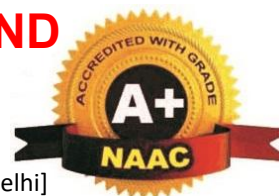


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DS704PC: WEB AND SOCIAL MEDIA ANALYTICS LAB

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

CO. No	COURSE OUTCOMES	BT Level
CO1	Knowledge on decision support systems.	1
CO2	Apply natural language processing concepts on text analytics.	3
CO3	Understand sentiment analysis.	2
CO4	Knowledge on search engine optimization and web analytics.	1
CO5	Use Google Analytics tools to analyze web traffic, conversion statistics and visitor profiles.	3

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2						2		3	2	
CO2	3	3	2	2	2						2		3	3	2
CO3	3	2	2	2	2						2		3	2	
CO4	3	2	2	2	3						2		3	2	2
CO5	3	2	2	3	3						2		3	3	2
Average	3	2.2	2	2.2	2.4						2		3	2.4	2



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