

ADITYA DEGREE COLLEGE

Affiliated to Adikavi Nannaya University | Approved by APSCHE | Accredited by NAAC with B⁺⁺ Grade Lakshminarayana Nagar, Kakinada - 533 003, Andhra Pradesh

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Semes	Course	Course Name	CO	Course Outcome					PI	ROG	RA	M C	DUT	CON	1ES				
ter	Code	Course Maine	co	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO1	Use grammar effectively in writing and Speaking.			2								2				2
		English - I	CO2	Demonstrate the use of good vocabulary.	2	2								2					
		A Course in	CO3	Demonstrating of writing skills.	2						2								2
	ENG-I	Communication and Soft Skills	CO4	Acquire ability to use Soft Skills in professional and daily life.	2	2									2			2	
			CO5	Confidently use the tools of communication skills.		2			2		3						3		
			C06	Demonstrate good listening skills	2						2							2	2
Ι			CO1	Recall the concept of Entrepreneurship, its applications and scope.	3	2					2							2	
	I SC-I	Life Skill Course - I Entrepreneurship	CO2	List the types of financial institutions that help the business at Central, State and Local Level.	2	3					1							2	
	LUC I	Development(E D)	CO3	Recall Central and State Government policies, A ware of various tax incentives.	2	3					2							1	
			CO4	Summarize on generating a broad idea for a starting an enterprise/start up.	3	1					2							2	

CO PO MAPPING – B.Sc DSSTCS

		СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		CO5	Discuss on preparing a Project Report for a start up and differentiate between financial, technical analysis an business feasibility.	2	2					2							3	
		CO6	Operate data using charts and spread sheets.	3	2					3							1	
		C01	Able to explain basic electrical circuits, ac and dc fundamentals	3					2									2
		C02	Analyse of Single Phase AC Circuits and Three phase circuits, the representation of alternating quantities and determining the power in these circuits	2					2		3							
SDC-I	Skill Development Course - I Electrical	C03	Illustrate the effects of electric shocks along with its remedies while usuing electrical appliances								2	2						2
	Appliances	C04	To select the various protective devices used in Electrical wiring	2	3				2									
		C05	Able to acquire Basic Knowledge of various Electrical appliances like Refrigerator,Oven,Fan etc		2									2				3
		C06	Able to understand the principle and operation of Illuminating devices,	2					2					2				2
	Introduction to	CO1	To understand the importance of how different streams contribute to Data Science.		3				2									3
C-IA	Science and R Programming	CO2	To apply and remember the process of Data Science			2		3	2					3				
		CO3	Ability to evaluate the use of different types of algorithm based on requirement				3			3			3					2

		СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		CO4	Understand and Analyse different problems that arise in Data Science					2			3			2				2
		CO5	Can create a basic program in R using different libraries						3	3				2			3	
		CO1	Student will able to define the word Statistics, knowledge of statistics, its scope and importance in various areas such as medical, engineering, agricultural and social sciences etc.	3					2			2		3				2
		CO2	They can interpret various types of data, their organization and evaluation of summary measures such as measures of central tendency and dispersion etc.	2		3	3		2		3	2		2				2
C-IB	Descriptive Statistics	CO3	Knowledge and computation of other types of data reflecting quality characteristics including concepts of independence and association of attributes.			3	3	2	2			2						
		C04	They can differentiate between different statistical methodologies.	2		3	3	2	2		2	2			2			
		C05	Learner can evaluate the concepts of correlation and regression analysis.	2		2	3	3	2									
		C06	Will be able to formulate the statistical data from raw data.	2		2			2									2
C-IC	Problem solving	CO1	Demonstrate the evolution and functionality of a digital computer.	2		2	2						3					
	in C	CO2	Logical skills to analyze a given problem.			2	3						2					3

			СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO3	Develop an algorithm solving given problem.			2	3	2	3									
			CO4	Demonstrate 'C' language constructs like iterative statements, Array processing, pointers.			3	3	2	2		2							
			CO5	Experiment 'C' language constructs to the algorithm to write a 'C' language program.	2			3	3					2					
			CO1	Use reading skills effectively.	2	2									2				2
			CO2	Interpret different types of texts.	2		2			2									
			CO3	Characterize what is being read.	2	2									2				
	ENG-II	English - II	CO4	Build up a repository of active vocabulary.		3					2				2				3
			C05	Use good writing strategies.	2		2				2								
			C06	Write well for any purpose.	2										2				
			CO1	List the literature of social networks and their properties.	3									2	3				
			CO2	Explain which network is suitable for whom.	2			2						3	2				
II		Life Skill Course - II	CO3	Discuss about the skills to use various social networking sites like twitter, flickr, etc.	2			2						3	3				
	LSC-II	Communication Technology	CO4	Write few GOI digital initiatives in higher education.	3									2	2				
		ICT	CO5	Apply skills to use online forums, docs, spreadsheets, etc for communication, collaboration and research.	3			2						2	2				
			CO6	Compare internet threats and security mechanisms.	2			3						2	2				
	SDC- II(A)	Skill Development	CO1	Write the basics of survey and reporting needs and methods	3	3					2			1	1				

		CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Course - II	CO2	Discuss on designing of a questionnaire	2	3					2			1	1				
	Survey & Reporting	CO3	Demonstrate on a simple and valid survey and Collect data	2	3					3			1	2				
		CO4	Summarize on interpret data and submit report.	2	3					3			1	2				
		CO1	Identify the types of business communication and correspondence	3	2								2	2				
	Skill	CO2	List the processes like receiving, filing and replying	2	3								1	1				
SDC- II(B)	Development Course - II Business	CO3	Explain about preparing good business communications	2	3								2	2				
	Communication	CO4	Write about organizational communication requirements and presentations.	3	1								1	2				
		CO5	Discuss search engine, payment gateways and SEO techniques.	3	2								1	2				
		CO1	Student can interpret data mining environment and applications		2				3		2	2						
		CO2	Determine various conceptions of data mining as evidenced in both research and application			2		3	3		3							
C-2A	Data Mining Concepts and	CO3	Conclude mathematical methods underlying the effective application of data mining.			2	3	2	2		3							
	Techniques	CO4	Should be able to apply the type of techniques based on the problems considered			3	2	3										
		CO5	Differentiate the types of mining problems and identify what type of algorithms are to be implemented		2	3	3	3			2							

		СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		CO1	This paper deals with the situation where there is uncertainty and how to measure that uncertainty by defining the probability.	2		2	2	2	2									
		CO2	Discuss an idea of using various standard theoretical distributions.			2	3	2	2		2							
	Probability and	CO3	Apply standard and continuous probability distributions to different situations.			2	3	2	2		2							
C-2B	Probability Distributions	C04	Knowledge related to concept of discrete and continuous random variables and their probability distributions including expectations and moments.			2	2	2	2		2			2				
		C05	Evaluate to distinguish between random and non random experiments.	2		2	2											
		C06	Generating moments such as MGF, CGF, CF, PGF through discrete and continuous distributions.			3	3	2	2				2					
		CO1	Demonstrate available data structure for data storage and processing.	2			2	2					2					
C-2C	DATA STRUCTURES USING C	CO2	Comprehend data structure and their real-time applications – stack, queue, linked list, trees and graph.			2	3	3	2				2					
		CO3	Choose a suitable data structure for an application.			2	3	2	2			2	2					

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO4	Develop ability to implement different sorting and search methods.	2			3	2			3							2
			CO5	Have knowledge on data structure basic operations like insert,delete,search,update and traversal.	2		3	2				2		3					3
			CO6	Design and develop problems using various data structure.			2	2	2	2				3					
			C07	Implement the applications of algorithms for sorting, pattern matching etc				2	3	2	2								
			C01	Speak fluently in English.	2	2					2							2	2
			C02	Participate confidently in any social interaction.		2					3							2	
	ENG-III	English - III	C03	Face any professional discourse.	2							2							
	LINO-III	English - III	C04	Demonstrate critical thinking.	2		2											2	
			C05	Enhance conversational skill by observing the professional interviews.		2			2		3							2	2
Ш			C01	Demonstrate the nature, components of an ecosystem and that humans are an integral part of nature.			3			3	2	2	2						2
	LSC- III(A)	Life Skill Course -III Environmental Education(EE)	C02	Realize the importance of environment, the goods and services of a healthy biodiversity, dependence of humans on environment.	2					2		3	2						3
			C03	Justify the ways and ill effects of destruction of environment, population explosion on ecosystems and global problems consequent to anthropogenic activities.				2		2			3			2	2		

		CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		C04	Discuss the laws/ acts made by government to prevent pollution, to protect biodiversity and environment a s a whole.			2							2			3		2
		C05	Acquaint with international agreements and national movements, and realize citizen's role in protecting environment and nature.	2		3		2								2		3
	Life Skill	C01	Understand the basic concepts of arithmetic ability, quantitative ability, logical reasoning, business computations and data interpretation and obtain the associated skills.	2		2	2	2										
LSC- III(B)	Course -III Analytical	C02	Acquire competency in the use of verbal reasoning.			2	2	2			2							2
	Skills(AS)	C03	Apply the skills and competencies acquired in the related areas.			2	2		2									
		C04	Solve problems pertaining to quantitative ability, logical reasoning and verbal ability inside and outstand the campus.			2	3	3	3									2
		CO1	Identify the online business and its advantages and disadvantages	3	3					2			3	2			2	
	C1 111	CO2	Recall new channels of marketing, their scope and steps involved	3	3					2			2	1			2	
SDC-III	Skill Development Course - III Online Business	CO3	Summarize the procurement, payment process, security and shipping in online business	3	3					2			2	2			1	
		CO4	Develop new marketing tools for online business	2	2					2			2	1			2	
		CO5	List the search engine, payment gateways and SEO techniques.	3	2					3			3	2			2	

		СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		CO1	Ability to program in Python IDE				2		3		2							
		CO2	The ability to know and comprehend the data Analysis phases		2			2			2					2		2
C-IIIA	Python Programming For	CO3	Understand the working knowledge of the Python IDE and proficiency in Python programming			3			3				2		2			
	Data Analysis	CO4	Get acquainted with different types of Python programming Data Analysis techniques.		2			3		2								3
		CO5	Exploring the basics of Python's visualization and modelling techniques						3	2		2						
		CO1	Learner can define the law of large numbers and concepts of sampling theory	2		2		2	2		2							
		CO2	They can interpret the basic concepts of population and sampling theory.	2		2		2	2		2							
	Statistical	CO3	Will be able to solve significance difference between sample observations.	2		2	2	2	3		2			1				
C-IIIB	Inference	CO4	Learner will be able to differentiate between parametric and non- parametric tests	2		2	2											
		C05	To predict the data by using inferential statistics like estimation theory and testing of hypothesis.	2		2	2	2	3		2							
		C06	Knowledge about inferences from Binomial Poissons and normal distributions as illustrations			3	3	2	3		2	2						
C-IIIC	DBMS	CO1	Gain knowledge of data base and DBMS.	2			2	2			3							

			СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO2	Demonstrate the fundamental concepts of DBMS with special emphasis on relational data model.			2	2		2				3					
			CO3	Demonstrating of normalization theory and apply such knowledge to the normalization of a data base.				2		2				3					2
			CO4	Model data base using ER diagrams and design data base schemes based on the model.				2		2				3					2
			CO5	Design a small data base using SQL.				2		3		2		3					
			CO6	Store, retrieve data in data base.				2	2	2				2					2
			CO1	Big Data knowledge in the Spark eco system					2	3		2		3					
			CO2	To comprehend Spark's entire architecture.	2	3						2			2				
	C-IV A1	Big Data Analytics UsingSpark	CO3	To be familiar with Spark Programming concepts and to know the differences between Hadoop and Spark			2		3							3			2
IV			CO4	Using Spark to map data analytics methods				3		2		2							3
			C05	Spark Programming Implementation in order to solve Analytical Issues		3		2					2		2				
	C W A2	Data	CO1	learning the importance of data visualisation in the field of data analysis and prediction	2	3				2				2					
		Visualization	CO2	To become familiar with Tableau's important libraries and to get equipped with the Tableau Tool.	3			2		2						2			

		СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		CO3	The seven steps of the data analysis process should enable students to visualise the data.	2		2					2			3				
		CO4	Students can create hybrid and explanatory data visualisations.			3			3		2							3
		C05	Students can comprehend the many stages of data visualisation.	2	3		2							3				
		CO1	Defining various statistical sampling schemes such as simple, stratified and systematic sampling.	2		2		2	2		2							2
		CO2	Understand the basic terms used in Design of Experiments.	2		2		2	2		2							2
	a	CO3	Use appropriate experimental designs to analyze the experimental data.	2		3	3	2	3		2	2						
C-IV B1	Sampling Techniques and Design of	CO4	Differentiate & amp; relate one way and two-way analysis of variance.	2		3	3	2	3		2	2						
	Experiments	C05	The idea of conducting the sample surveys and predict various sampling methodologies.	2		3	2	2	3		2	2						1
		C06	This gives an idea of logical construction of experimental designs & amp; applications of these designs now-a-days in various research areas.			2	2	3	2		3	3		1				
C-IV B2	Applied Statistics	CO1	Student will be able to define Time series data, its applications to various fields and components of time series,	2		2	2		2						2			

		СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		CO2	Interpret and use a range of index numbers commonly used in the business sector		2	1	2	2								2		
		CO3	Perform calculations involving simple and weighted index numbers	2		2	2					2						
		CO4	Will be able to analyse various growth curves such as modified exponential, Gompertz and logistic curve, Fitting of trend by Moving Average method			2	2	2	3					2				
		C05	Will be able to evaluate measurement of Seasonal Indices by Ratio-to-Trend, Ratio-to-Moving Average and Link Relative methods	2		2		3		2				2				
		C06	The vital statistics enlighten the students in obtaining different mortality, fertility rates thus obtaining the population growth rates and construction and use of life tables in actuarial science.	3		2		2	2			2						
		CO1	Demonstrate the benefits of a well- structured program.	2			3	2					2					
		CO2	Demonstrate different computer programming paradigms.			2	2	2					2					
C- IV C1	Object oriented programming using java	CO3	Demonstrate underlying principles of object –oriented programming in java	3		2	2	2					2					
		CO4	Develop problem-solving and programming skill using OOP concepts				2	2	3		2							2

			СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO5	Develop the ability to solve real- world problems through software development high-level programming language like java			2	2		3		2			2				2
			CO1	Know computers system resources and the roll of operating system in resource management.	2			2	2					3					
		OPERATING SYSTEMS	CO2	Demonstrate operating system architectural design and its services.	2		2	3	2										
	C-IV C2		CO3	Gain knowledge of various types of operating system including Unix and Android.			2	3	2					2					
			CO4	Demonstrate various process management concepts including scheduling, synchronization, and deadlocks.			2	2	3	2									3
			CO5	Have a basic knowledge about multithreading.	2		2	2		3									
			CO6	Comprehend different approaches for memory management.			2	3		2									2
			C08	Specify objectives of modern operating systems and describe how operating systems have evolved over time.	2		2	3						2					
V		Supervised ML With Python	C01	Ability to understand basics of Supervised ML		2				2					3				2
	C-V A1		C02	Should be able to create datasets and models			2		2				3						2
			C03	Apply and work on Regression & classification			3				3	3				2			

			C04	Work on Feature extraction with data sets			2				2	3					3		
			СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			C05	Understand and Evaluate SVM algorithm		2				3					3				3
			C01	Finding patterns in datasets is the goal of unsupervised machine learning.		3				3			2						2
	C- V A2	Unsupervised ML With Python	C02	This course focuses on clustering, feature extraction, and optimization strategies.			2		3		3					2			
			C03	Students will be able to interpret and implement Unsupervised Learning algorithms in Python.	2	3			2					3					
			C04	Machine Learning techniques were applied to real-world datasets.			3			3					2				2
			C05	It provided a framework for dealing with real-world applications		3	2						2						3
		Operations Research - I	C01	Student will be able to list the applications and history of operation research.	2		2			2		2	2						
			C02	Learner will be able to understand how to convert real life problems into mathematical methods.	2		3		2	3		2	1						
	C-V B1		C03	Able to apply the surplus and slack artificial variables to convert all inequalities	2		3	3	2	2		2							
			C04	Student will be able to analyze application of scientific and mathematical methods to the study analysis of problems involving complex systems.	2		2	3	2	2		2							

			со	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			C05	Learner can conclude that operation research techniques are used to make decision in many fields like agriculture, finance, marketing etc.	2		3	2				2	2		2	2			2
			C06	Will be able to create upper and lower bounds for input parameter values within which they can vary without causing violent changes in the current optimal solution .	2		2	3	2	2		2							
	C- V B2	Operations Research - II	C01	Student will be able to identify a way that minimizes the shipping cost and satisfies all demand and supply constraints.	2		3	3	2	2		2							2
			C02	To be able to explain a way to minimize the cost or time for completing a task.	2		3	3	2	2		2							2
			C03	Able to apply the shortest paths between all pairs of vertices in an edge-weighted directed graph.	2		3	3	2	2		2							
			C04	Student will be able to analyze the time taken to finish each sequenced activity.	2		3	3	2	2		2							
			C05	Learner can conclude that critical path identification is required for any Project planning phrase	2		3	3	2	2		2							2
			C06	Will be able to create a detailed plan, including defining tasks and estimated duration using PERT	2		3	3	3	2		2							2

			СО	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			C01	Demonstrate and appreciate the web architecture and services.	2			2	2					3					
			C02	Gain knowledge about various components of a website.				3	2			3		2					
	C-V C1	Web Interface Designing Technologies	C03	Demonstrate skills regarding creation of a static website and an interface to dynamic website.				3	2					3					2
			C04	Learn how to install word press and gain the knowledge of installing various plugins to use in their websites.	2			2	2					2					
		Web Applications	C01	Write simple programs in PHP.	2			3	2					2					
			C02	Demonstrate how to use regular expressions, handle exceptions, and validate data using PHP.	2			2	2					3					
			C03	Use Built functions and construct User defined functions in PHP programming.				3	2					3	2				
	C- V C2	using PHP&	C04	Write PHP scripts to handle HTML forms.				2	2					2	2				
		MYSQL	C05	Write programs to create dynamic and interactive web based applications using PHP and MYSQL.				2	3					3					
			C06	Know how to use PHP with a MySQL database and can write database driven webpages.				2	3	2				3					2