

			CO	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			
	SDC-I	Skill Development Course - I Electrical Appliances	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								
			C03	Illustrate the effects of electric shocks along with its remedies while using electrical appliances										2	2						2
			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
			C-IA	Introduction to Data Science and R Programming	CO1	To understand the importance of how different streams contribute to Data Science.		3				2									3
	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

			CO	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			
	C-IB	Descriptive Statistics	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	
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							
CO4			They can differentiate between different statistical methodologies.	2		3	3	2	2			2	2				2				
CO5			Learner can evaluate the concepts of correlation and regression analysis.	2		2	3	3	2												
CO6			Will be able to formulate the statistical data from raw data.	2		2				2											2
			C-IC	Problem solving in C	CO1	Demonstrate the evolution and functionality of a digital computer.	2		2	2						3					
	CO2	Logical skills to analyze a given problem.					2	3							2					3	

			CO	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							
II	ENG-II	English - II	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				
			CO4	Build up a repository of active vocabulary.		3							2				2				3
			CO5	Use good writing strategies.	2		2					2									
			CO6	Write well for any purpose.	2												2				
	LSC-II	Life Skill Course - II Information and Communication Technology ICT	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				
			CO3	Discuss about the skills to use various social networking sites like twitter, flickr, etc.	2			2								3	3				
			CO4	Write few GOI digital initiatives in higher education.	3											2	2				
			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 Survey & Reporting	CO2	Discuss on designing of a questionnaire	2	3					2			1	1		
		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						
SDC- II(B)	Skill Development Course - II Business Communication	CO1	Identify the types of business communication and correspondence	3	2								2	2						
		CO2	List the processes like receiving, filing and replying	2	3									1	1					
		CO3	Explain about preparing good business communications	2	3										2	2				
		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				
C-2A	Data Mining Concepts and Techniques	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									
		CO3	Conclude mathematical methods underlying the effective application of data mining.			2	3	2	2			3								
		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								

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
C-2B	Probability and Probability Distributions	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									
		CO3	Apply standard and continuous probability distributions to different situations.			2	3	2	2		2									
		CO4	Knowledge related to concept of discrete and continuous random variables and their probability distributions including expectations and moments.			2	2	2	2		2				2					
		CO5	Evaluate to distinguish between random and non random experiments.	2		2	2													
		CO6	Generating moments such as MGF, CGF, CF, PGF through discrete and continuous distributions.			3	3	2	2						2					
C-2C	DATA STRUCTURES USING C	CO1	Demonstrate available data structure for data storage and processing.	2			2	2						2						
		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							
			CO7	Implement the applications of algorithms for sorting, pattern matching etc				2	3	2	2											
III	ENG-III	English - III	C01	Speak fluently in English.	2	2					2							2	2			
			C02	Participate confidently in any social interaction.		2						3								2		
			C03	Face any professional discourse.	2									2								
			C04	Demonstrate critical thinking.	2		2														2	
			C05	Enhance conversational skill by observing the professional interviews.		2			2				3								2	2
	LSC-III(A)	Life Skill Course -III Environmental Education(EE)	C01	Demonstrate the nature, components of an ecosystem and that humans are an integral part of nature.				3			3	2	2	2							2	
			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 as 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
	LSC-III(B)	Life Skill Course -III Analytical Skills(AS)	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										
			C02	Acquire competency in the use of verbal reasoning.			2	2	2			2							2
			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 outside the campus.			2	3	3	3									2
	SDC-III	Skill Development Course - III Online Business	CO1	Identify the online business and its advantages and disadvantages	3	3					2			3	2				2
			CO2	Recall new channels of marketing, their scope and steps involved	3	3					2			2	1				2
			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

			CO	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		
IV	C-IV A1	Big Data Analytics Using Spark	CO1	Big Data knowledge in the Spark eco system					2	3		2		3							
			CO2	To comprehend Spark's entire architecture.	2	3						2			2						
			CO3	To be familiar with Spark Programming concepts and to know the differences between Hadoop and Spark			2		3									3			2
			CO4	Using Spark to map data analytics methods				3		2		2									3
			CO5	Spark Programming Implementation in order to solve Analytical Issues		3		2						2		2					
	C-IV A2	Data Visualization	CO1	learning the importance of data visualisation in the field of data analysis and prediction	2	3					2				2						
			CO2	To become familiar with Tableau's important libraries and to get equipped with the Tableau Tool.	3			2		2								2			

			CO	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		
			CO5	Students can comprehend the many stages of data visualisation.	2	3		2							3						
	C-IV B1	Sampling Techniques and Design of Experiments	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	
CO3			Use appropriate experimental designs to analyze the experimental data.	2		3	3	2	3			2	2								
CO4			Differentiate & relate one way and two-way analysis of variance.	2		3	3	2	3			2	2								
CO5			The idea of conducting the sample surveys and predict various sampling methodologies.	2		3	2	2	3			2	2								1
CO6			This gives an idea of logical construction of experimental designs & 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					

			CO	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		
	C-IV C2	OPERATING SYSTEMS	CO1	Know computers system resources and the roll of operating system in resource management.	2			2	2					3							
			CO2	Demonstrate operating system architectural design and its services.	2		2	3	2												
			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			C-V A1	Supervised ML With Python	C01	Ability to understand basics of Supervised ML		2				2					3				2
	C02	Should be able to create datasets and models					2		2				3							2	
	C03	Apply and work on Regression & classification					3					3	3					2			

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
C- V C1	Web Interface Designing Technologies	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						
		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					
C- V C2	Web Applications Development using PHP & MYSQL	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				
		C04	Write PHP scripts to handle HTML forms.					2	2							2	2				
		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					