GANPAT UNIVERSITY									
FACULTY OF MANAGEMENT STUDIES									
Programme	Bachelor of Business Administration					Branch / Spec.	Business Analytics		
Semester	VI					Version	1.0.0.0		
Effective from Academic Year			2025-26			Effective for the Batch Admitted in			July 2023
Subject Code	6A04PF1		Subject Name			Programming for Analytics -1			
Teaching Scheme						Examination Scheme (Marks)			
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	04	00	00	00	04	Theory	40	60	100
Hours	04	00	00	00	04	Practical	00	00	00

Pre-requisite:

Objective:

This course enables students to write SAS programs to access, explore, prepare, and analyze data. It is the entry point to learning SAS programming for data science, machine learning, and artificial intelligence and learn data manipulation techniques using the SAS DATA.

Learning Outcomes:

On successful completion of the course, the students will be able to:

- Write and submit SAS programs, Access SAS, Microsoft Excel, and text data, explore and validate data, prepare data by sub setting rows and computing new columns.
- Analyze and report on data, export data and results to Excel, PDF, and other formats, use SQL in SAS to query and join, Understand and control DATA step processing.
- Create an accumulating column and process data in groups, manipulate data with functions,
- Convert column type, create custom formats, Concatenate and merge tables, process repetitive code and restructure tables.

Mapping of PO-CO and PSO-CO:

Course Outcome (CO) No.	PO-CO Mapping						PSO-CO Mapping			
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4
CO1	3	2	1	2	1	1	3	2	1	3
CO2	3	2	1	2	1	1	3	2	1	3
CO3	3	2	1	2	1	1	3	2	1	3
CO4	3	2	1	2	1	1	3	2	1	3

Theory Syllabus

Unit	Content	Hrs.
1	**Essentials** The SAS programming process. Using SAS programming tools. Understanding SAS syntax. **Accessing Data** Understanding SAS data Accessing data through libraries; Importing data into SAS **Exploring and Validating Data** Exploring data. Filtering rows. Formatting columns. Sorting data and removing duplicates.	15
2	**Preparing Data** Reading and filtering data. Computing new columns. Conditional processing. **Analyzing and Reporting on Data** Enhancing reports with titles, footnotes, and labels. Creating frequency reports. Creating summary statistics reports. **Exporting Results** Exporting data, Exporting reports.	15
3	**Using SQL in SAS** Using Structured Query Language in SAS, joining tables using SQL in SAS.	15

	Controlling DATA Step Processing Setting up for this course, Understanding DATA step processing, Directing DATA step output. **Summarizing Data** Creating an accumulating column, Processing data in groups.	
4	**Manipulating Data with Functions** Understanding SAS functions and CALL routines, using numeric and date functions, using character functions, using special functions to convert column type. **Creating Custom Formats** Creating and using custom formats, Creating custom formats from tables. **Combining Tables** Concatenating tables, Merging tables, Identifying matching and nonmatching rows.	**15**
	Exam: Theory 100%	
Text Book:		
	SAS® Programming 1: Essentials, SAS Official Course Notes, SAS Publishing. Cary, U.S.A. Latest Edition.	
Reference Books:		
	SAS® Programming 2: Data Manipulation Techniques, SAS Official Course Notes, SAS Publishing. Cary, U.S.A. Latest Edition.	
Online Resource:		
	https://libguides.library.kent.edu/SAS/syntax.	