GANPAT UNIVERSITY									
FACULTY OF MANAGEMENT STUDIES									
Programme	MBA	Branch/Spec.	Business Analytics						
Semester	I					Version	1.0.0.0		
Effective from Academic Year	2026-27					Effective for the batch Admitted in	July 2026		
Subject code	**ICC502 PFA I**	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	3	0	0	0	3	Theory	50	50	100
Hours	3	0	0	0	3	Practical			
Pre-requisites:									

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 step and procedures to access, transform, and summarize data.

Course Outcome:
CO-1: write and submit SAS programs
CO-2: Access SAS, Microsoft Excel, and text data, explore and validate data
CO-3: Prepare data by sub setting rows and computing new columns
CO-4: Analyze and report on data, export data and results to Excel, PDF, and other formats
CO-5: Use SQL in SAS to query and join,
CO-6: Understand and control DATA step processing
CO-7: Create an accumulating column and process data in groups, manipulate data with functions
CO-8: Convert column type, create custom formats
CO-9: Concatenate and merge tables, process repetitive code and restructure tables.

Unit	Content	Hrs
1	**Essentials** The SAS programming process. Using SAS programming tools. Understanding SAS syntax.	2
2	**Accessing Data** Understanding SAS data Accessing data through libraries; Importing data into SAS	2
3	**Exploring and Validating Data** Exploring data. Filtering rows. Formatting columns. Sorting data and removing duplicates.	**2**
4	**Preparing Data** Reading and filtering data. Computing new columns. Conditional processing.	**2**
5	**Analyzing and Reporting on Data** Enhancing reports with titles, footnotes, and labels. Creating frequency reports. Creating summary statistics reports.	**5**

Note: Version 1.0.0.0 (First Digit= New syllabus/Revision in Full Syllabus, Second Digit=Revision in Teaching Scheme,Third Digit=Revision in Exam Scheme, Forth Digit= Content Revision) L=Lecture, TU=Tutorial, P= Practical/Lab., TW= Term work, DT= Direct Teaching, Lab.=Laboratory work
CE= Continuous Evaluation, SEE= Semester End Examination

6	**Exporting Results** Exporting data. Exporting reports.	**2**
7	**Using SQL in SAS** Using Structured Query Language in SAS. Joining tables using SQL in SAS.	**2**
8	**Controlling DATA Step Processing** Setting up for this course. Understanding DATA step processing. Directing DATA step output.	**3**
9	**Summarizing Data** Creating an accumulating column. Processing data in groups.	**3**
10	**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.	**6**
11	**Creating Custom Formats** Creating and using custom formats. Creating custom formats from tables.	**4**
12	**Combining Tables** Concatenating tables. Merging tables. Identifying matching and nonmatching rows.	**4**
13	**Processing Repetitive Code** Using iterative DO loops. Using conditional DO loops.	**4**
14	**Restructuring Tables** Restructuring data with the DATA step. Restructuring data with the TRANSPOSE procedure.	**4**
Practical content		

Reference Books

1. SAS® Programming 1: Essentials, SAS Official Course Notes, SAS Publishing. Cary, U.S.A. Latest Edition.
2. SAS® Programming 2: Data Manipulation Techniques, SAS Official Course Notes, SAS Publishing. Cary, U.S.A. Latest Edition.

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