MAHATMA GANDHI UNIVERSITY, KERALA

Abstract

Bachelor of Science (Honours) Statistics - 3rd Semester - Modifications to the Course Outcomes and Course Content - Approved - Orders Issued.

ACA 16

No. 3131/ACA 16/2025/MGU Priyadarsini Hills,Dated: 03.04.2025

Read:-1. U.O. No. 5797/ACA16/2024/MGU, dated. 27.06.2024

2. Minutes of the meeting of the Expert Committee on Statistics (UG), held on 04.12.2024

3. Orders of the Vice Chancellor under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, dated. 29.03.2025.

ORDER

The syllabi of various Honours Under Graduate Programmes coming underThe MGU-UGP (Honours) Regulations, 2024, have been approved vide paper read as (1) above and published on the website of the University.

The Expert Committee on Statistics (UG), discussed the need to modify the Course Outcomes (CO) and Course Content of some of the DSC / DSE / MDC type courses in the **Third Semester** syllabus of the Bachelor of Science (Honours) Statistics programme, and has submitted recommendations vide paper read as (2) above.

(Recommendations are attached as Annexure.)

Considering the urgency of the matter, the Vice Chancellor, in exercise of the powers of the Academic Council vested upon him under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, vide paper read as (3), has approved the above recommendations.

Hence, the Course Outcomes and the Course Content of the said courses in the Third Semester syllabus of the Bachelor of Science (Honours) Statistics programme, stands modified to this extent.

Orders are issued accordingly.

MANOJ G

ASSISTANT REGISTRAR III

(ACADEMIC)

For REGISTRAR

Copy To

1. PS to VC
2. PA to Registrar/CE
3. Convenor, Expert Committee, Statistics (UG)
4. JR 2 (Admin)/ DR 2, AR 3 (Academic)
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Section Officer

Annexure

Semester 3

Course Name : Statistical Distributions

Course Code : MG3DSCSTA200

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome (Modified)	Learning Domains (Modified)	PO No.	Page Number
1	Analyze various concepts of probability distributions	An	No change	47
2	Apply moment generating function and characteristic function to study the properties of probability distributions	An		
3	Evaluate the sampling distributions	No change		48
4	Fitting of probability distributions and random number generation	E		
5	Removed			
6				

COURSE CONTENT

Content for Classroom Transaction (Units)

Module	Course Description	Hours	CO No. (modified)	Page Number
1.4	No change	No change	1,2	48
2.2			2	
2.3			1,2	49
2.4			1,4	
3.1			3	
3.2			2,3	

3.3	No change	No change	3	
3.4			3	
3.5			3	
4			1,4	49,50

Course Name : Analytical Tools for Multivariate Analysis

Course Code : MG3DSCSTA201

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome (Modified)	Learning Domains (Modified)	PO No.	Page Number
1	Interpret vectors and vector space	An	No change	52
2	Evaluate matrices and determinants	E		
3	Analyze generalized inverse of matrix and quadratic forms	An		
4	Obtain the characteristic roots and characteristic vectors	An		53
5	Removed			
6				

COURSE CONTENT

Content for Classroom Transaction (Units)

Module	Course Description	Hours	CO No. (modified)	Page Number
3.1	No change	No change	2	54, 55
3.2			2	
3.5			1	
4			1,2,3,4	

Course Name : Statistical Techniques for Data Science and Machine Learning (Data Analytics Specialization)

Course Code : MG3DSESTA200

COURSE CONTENT

Content for Classroom Transaction (Units)

Module	Course Description	Hours	CO No. (modified)	Page Number
1.5	No change	No change	1	58

Course Name : Statistical Computing using R

Course Code : MG3DSESTA201

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome (Modified)	Learning Domains (Modified)	PO No. (Modified)	Page Number
2	Analyze data using R software	An	2	61
3	Fitting probability distributions using R software	E	No change	
4	Generate random numbers from important probability distributions	E		
5	Removed			
6				62
7				
8				

COURSE CONTENT

Content for Classroom Transaction (Units)

Module	Course Description	Hours	CO No. (modified)	Page Number
1.2	No change	No change	1	62
1.3			2	
1.4			2	
1.5			2	
1.6			2	
2.1			3	
2.2			3	
2.3			4	63
2.4			4	
3.1			2	
3.2			2	
4			2,3,4	

Course Name : Vital Statistics and Index Numbers

Course Code : MG3DSESTA202

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome (Modified)	Learning Domains (Modified)	PO No.	Page Number
1	Understood the sources of Vital Statistics	No change	No change	65
2	Evaluate measurements of fertility and mortality	E		
3	Analyse life tables and its characteristics	An		
4	Evaluate Index Numbers	E		
5	Removed			66
6				
7				
8				

COURSE CONTENT

Content for Classroom Transaction (Units)

Module	Course Description	Hours	CO No. (modified)	Page Number
2.4	No change	No change	2	66
3.1			4	67
3.2			4	
3.3			4	
3.4			4	
3.5			4	
4			2,3,4	

Course Name : Data Analysis in Inferential Statistics using R / Python

Course Code : MG3DSCSTA202

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome (Modified)	Learning Domains (Modified)	PO No.	Page Number
1	Understanding bivariate probability distribution	No change	No change	70
2	Interpret Central Limit Theorem and sampling distributions	An		
3	Apply estimation of parameters	A		
4	Design testing of statistical hypothesis	E		
5	Apply data analysis using R / Python	A		

COURSE CONTENT

Content for Classroom Transaction (Units)

Module	Course Description (modified)	Hours (modified)	CO No. (modified)	Page Number
1	Bivariate Probability Theory	10		71
1.1	Describe bivariate random variable, demonstrate joint probability mass function, its properties and simple problems. Joint probability density function (concept only)	5	No change	
1.2	Demonstrate marginal and conditional distributions (bivariate case), demonstrate independence of random variables (bivariate case) – problems in discrete case only	5	1	
1.3	Removed			
1.4				
1.5				
2	Sampling distributions	No change		
2.1	Central Limit Theorem (statement and its importance only)	No change	No change	
2.2	Statistic parameter. Distribution of sample mean and variance (without proof)	3	No change	
2.3	Normal distribution, Student's t-distribution, Chi square distribution, F	10	No change	

	distribution, inter relationship between them.			71
2.4	Removed			
2.5				
3	Statistical inference	20		
3.1	Estimation, point estimation and interval estimation	3	3	
3.2	Desirable properties of a good point estimator	2	3	
3.3	Methods of estimation – MLE, Method of moments	3	3	
3.4	Testing of hypothesis: Statistical test, null and alternative hypothesis, types of errors, significance level, power, critical region, p value	2	4	
3.5	Tesing of population mean (One sample and two sample) (z test, t-test), testing of population proportion (One sample and two sample), paired t test. ANOVA (one way only). Goodness of fit, Chi Square test (independence of attributes).	10	4	

Course Name : Statistical Research Techniques using Softwares

Course Code : MG3DSCSTA203

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome (Modified)	Learning Domains	PO No.	Page Number
5	Conduct data analysis using R/Python/Spread sheet	No change	No change	74

COURSE CONTENT

Content for Classroom Transaction (Units)

Module	Course Description (modified)	Hours (modified)	CO No.	Page Number
4.1	Removed			76
4.2	Statistical analysis using Spreadsheet/Python/ R programming	30	No change	

Course Name : Statistical Analysis of Related Data

Course Code : MG3MDCSTA200

COURSE CONTENT

Content for Classroom Transaction (Units)

Module	Course Description	Hours	CO No. (modified)	Page Number
3.3	No change	No change	2,3,4	84
3.5			2,3,4	