UNIVERSITY OF PUNE

Circular No. 231 of 1996

In pursuance of the decision taken by the University authorities, it is hereby notified for the information of all concerned that the revised syllabus for F.Y.B.A. in Statistics (Applied) is as given in appendix 'A' .

The revised syllabus will be implemented from the Academic year 1996-97.

The Principals of all affiliated colleges in Science where Statistics is taught are requested to bring the contents of this circular to the notice of all concerned teachers and students.

Ganeshkhind,
Pune-411 007.

Ref.No.CB/S/Stat/585
Date : 12-6-96

for Registrar

To

The Principals of all affiliated Science Colleges.

Copy f.w.cs. to for information :

1) The Deans Faculty of Science
2) The members of the Boards of Studies in Statistics
3) The Dy.Registrar (Examination 1,2,3,4)
4) The Asstt.Registrar (Exam.Co-ordination Unit)
5) The Asstt.Registrar (Exam.S & T Unit)
6) The Asstt.Registrar (Eligibility)
7) The Asstt.Registrar (Records & Meetings)
8) The Public Relation Officer.
9) The Law Officer, Pune-7
10) The P.A. to Registrar
11) The University Sub-Centres at Ahmednagar, Nasik.
12) The General Secretary PUTA/PUCTC
13) The Data Processing Unit, Pune-7
14) The Dy.Registrar, Admission
15) The Asstt.Registrar (Admission)
16) The Section Officer (Affiliation)
17) The Section Officer (Recognition)
18) The Asstt.Registrar (Strong Room)

Authority : AC B 58 PA 58/96
B 58/96 Dt. 19/2/96 & 7,8/3/96.

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Encl. to Cir. No. 231/46

SYLLABUS FOR F.Y.B.A. FOR APPLIED STATISTICS

PAPER I Descriptive Statistics

Contents :

1. Population and Sample :

1.1 Notion of Statistical population, types of population and sample from a population with illustrations.

2. Frequency distribution :

2.1 Definition : attributes and variables, discrete variables and continuous variables, raw data.

2.2. Construction of frequency distributions.

Cumulative frequency distributions.

2.3 Graphical representation of frequency distribution :

Histogram, frequency polygon, ogive curves, (for equal class intervals)

2.4 Examples and problems.

3. Types of Statistical Data :

3.1 A discrete series of observations on a discrete variable.

3.2 A grouped frequency distribution of a discrete variable.

3.3 A grouped frequency distribution of a continuous variable.

Inclusive and exclusive methods of classification.

3.4 Data pertaining to attributes.

4. Tabulation :

4.1 Construction of statistical tables : Parts of a table rules of tabulation, uses of tabulation, construction of tables with one, two and three factors of classification.

4.2 Requirements of a good statistical table.

4.3 Simple examples.

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5. Diagramatic representation :

5.1 One dimensional bar diagram, sub divided bar diagram, percentage bar diagram, multiple bar diagram and pie diagram.

6. Measures of Central Tendency :

6.1 Concept of central tendency of statistical data, statistical average, requirements of a good statistical average.

6.2 Arithematic mean (A.M.) : definition effect change of origin and scale, combined mean of a finite number of groups, merits and demerits.

6.3 Harmonic Mean (H.M) : definition, merits and demerits.

6.4 Mode (for equal classes) : definition, formula for computation (without proof), graphical method of determination of mode, merits and demerits.

6.5 Median : definition, formula for computation (without proof), graphical method of determination of median, merits and demerits.

6.6 Partition values :

Quartiles, deciles and percentiles, graphical method of determination of quartiles, deciles and percentiles.

6.7 Weighted A.M.

6.8 Simple numerical problems.

7. Measures of Dispersion :

7.1 Concept of dispersion, requirements of a good measure of dispersion.

7.2 Range : definition, merits and demerits.

7.3 Semi-interquartile range (Quartile deviation) : definitions merits and demerits.

7.4 Mean Deviation : definition, merits and demerits.

7.5 Mean Square Deviation : definition. Variance and standard effect of deviation : definition, merits and demerits, effect of change of origin and scale.

7.6 Measures of absolute and relative dispersion : coefficient of quartile deviation, coefficient of

..3..

variation (cv).

7.7. Sample numerical problems.

8. Moments :

8.1 Raw moments for an ungrouped and grouped data (Upto order 4)

8.2 Central moments for an ungrouped and grouped data (Upto order 4)

8.3 Relations between central moments and raw moments (Upto order 4)

8.4 Simple numerical problems.

9. Skewness :

9.1 Concept of skewness of a frequency distribution, positive skewness, negative skewness, symmetric frequency distribution.

9.2 Bowley's coefficient of skewness, Karl Pearson's coefficient of skewness, Measures of skewness based on moments.

9.3 Simple numerical problems.

10. Kurtesis :

10.1 Concept of kurtesis, leptokurtic, mesokurtic and platykurtic frequency distributions.

10.2 Measures of kurtsis based on moments.

10.3 Simple numerical problems.

11. Elementary co-ordinate geometry :

11.1 Plotting of points.

11.2 Slope of a straight line, equation of a straight line.

11.3 Forms of an equation of a straight line -
i) $Y = mx + c$ ii) $Y-Y_1 = m\ (X-X_1)$

11.4 Tracing of straight lines, inter Section of straight lines.

(Questions not to be asked on co-ordinate geometry.)

12. Correlation :

12.1 Bivariate data,

12.2 Concept of correlation between two variables, positive correlation, negative correlation.

12.3 Scatter diagram, conclusion about the type of correlation from scatter diagram.

12.4 Karl Pearson's coefficient of correlation (r): Definition computation and interpretation, Properties (Without proffs):

i) $-1 \leq r \leq 1$

ii) invariant to change of origin and scale.

12.5 Spearman's rank correlation coefficient : definition, computation and interpretation.

12.6 Simple numerical problems.

13. ~~12~~. Regression :

13.1 Lines of regression, interpretation of the parameters.

13.2 Regression coefficients (byx,bxy) definition, computation, Properties of the regression coefficients (statements only)

13.3 Simple numerical problems.

14. Theory of attributes :

14.1 Attributes and variables, dichotomy, class frequency, order of a class, positive class frequency, negative class frequency, ultimate class frequency, relationships among different class frequencies (Upto two attributes).

14.2 Fundamental set of class frequencies : difinition. To determine whether a given set of frequencies is a fundamental sector not (upto two attributes).

14.3 Notion of consistency of statistical data, conditions of consistency in terms of positive class frequencies (upto two attributes).

14.4 Concept of independence and association of two attributes.

14.5 Yule's coefficient of association (Ω).

14.6 Simple numerical problems.

Text Books recommended :

1. Yule, G.U. and Kendall, M.G. : An Introduction to Theory of Statistics.

2. Goon, Gupta and Dasgupta : Fundamentals of Statistics, Vol.I

3. Gupta S.P.:Statistical Methods.

4. Gupta S.C. : Fundamentals of Statistics - By Himalaya Publishing House, reprint copy - 1994

5. Walpole R.E. : Introduction to Statistics.

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