

**Syllabus for 4-Year UG Honours in B.Sc. (Statistics) as Major in consonance with
Curriculum framework w.e.f. AY 2026-27**

COURSE STRUCTURE (for Semester IV)

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
II	IV	8	Design and Analysis of Experiments	3	3
			Design and Analysis of Experiments Practical Course	2	1
		9	Applied Statistics	3	3
			Applied Statistics Practical Course	2	1
		10	Statistical data analysis using MS - excel	3	3
			Statistical data analysis using MS – excel practical course	2	1


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SEMESTER - IV

COURSE 8: DESIGN AND ANALYSIS OF EXPERIMENTS

Theory

Credits: 3

3 hrs/week

Course Outcomes

After successful completion of the course students will be able to:

1. To acquaint with the role of statistics indifferent fields with special reference to agriculture.
2. Learn to apply the one of the designs of experiment to agricultural fields.
3. Learn to apply the randomization to the blocks of various fields in agriculture.
4. To get the familiarity about applications of three principles.
5. Learn to deal the agricultural fields with different factors and levels.
6. To use appropriate experimental designs to analyze the experimental data.

Unit – 1: Analysis of variance (ANOVA)

Concept, Definition and assumptions. ANOVA one way classification – mathematical model, analysis – with equal and unequal classification. ANOVA two-way classification – mathematical model, analysis and problems.

Unit – 2: Completely Randomised Design (CRD)

Definition, terminology, Principles of design of experiments, CRD – Concept, advantages and disadvantages, applications, Layout, Statistical analysis. Critical Differences when hypothesis is significant.

Unit – 3: Randomised Block Design (RBD)

Concept, advantages and disadvantages, applications, Layout, Statistical analysis, problems and Critical Differences. RBD with one missing value and its analysis, problems.

Unit – 4: Latin Square Design (LSD)

Concept of LSD, its advantages and disadvantages, applications, Layout, Statistical analysis, problems and Critical Differences.

Unit – 5:

Estimation of one missing value in LSD and its analysis, problems. Efficiency of RBD relative to CRD. Efficiency of LSD over RBD and CRD and related problems.


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Text Books / References

1. S. C. Gupta & V. K. Kapoor: Fundamentals of Applied Statistics, Sultan Chand & Sons, New Delhi.
2. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI.
3. M.R. Saluja: Indian Official Statistics. ISI publications.

Suggested Co-curricular Activities:

1. Training of students by related industrial experts.
2. Assignments including technical assignments if any.
3. Seminars, Group Discussions, Quiz, Debates etc on related topics.
4. Preparation of audio and videos on tools of diagrammatic and graphical representations.
5. Collection of material/figures/photos/author photoes of related topics.
6. Invited lectures and presentations of stalwarts to those topics.
7. Visits/field trips of firms, research organizations etc.


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SEMESTER - IV

COURSE 8: DESIGN AND ANALYSIS OF EXPERIMENTS

Practical

Credits: 1

2 hrs/week

List of Experiments:

1. ANOVA – one way classification with equal number of observations.
2. ANOVA – one way classification with unequal number of observations.
3. ANOVA – Two way classification.
4. Analysis of CRD and critical differences.
5. Analysis of RBD and critical differences. Relative efficiency of CRD with RBD.
6. Estimation of single missing observation in RBD and its analysis.
7. Analysis of LSD and efficiency of LSD over CRD and RBD.
8. Estimation of single missing observation in LSD and its analysis.


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4- Year UG Honours, Major
Syllabus
(2026-27)
Semester-IV

Model Question Paper

Time : 3hrs

Marks:75

Part-A

Answer any Five Questions. Each Question carries 3 Marks.

5x3=15

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Answer the following questions. Each question carries 12 Marks

5x12=60

11. a) Unit-I
(Or)
b) Unit-I

12. a) Unit-II
(Or)
b) Unit-II

13. a) Unit-III
(Or)
b) Unit-III

14. a) Unit-IV
(Or)
b) Unit-IV

15. a) Unit-V
(Or)
b) Unit-V