

# MAHARANA PRATAP MAHAVIDYALAY JUNGLE DHUSAN GORAKHPUR

**Lesson Plan 2024-25**

**B. Sc. V Sem.**

**STATISTICS (STAT304 & STAT305)**

| Date     | Lecture no. | Teacher's Name | Course Code | Lesson                                     | Topic                                                             |
|----------|-------------|----------------|-------------|--------------------------------------------|-------------------------------------------------------------------|
| 16-01-25 | 1           | TS             | 304         | Introduction to Computer                   | Generation of Computer                                            |
| 17-01-25 | 2           | TS             | 304         | Introduction to Computer                   | Basic Structure of computer                                       |
| 17-01-25 | 1           | AKR            | 305         | History & Background                       | Developing mathematical models                                    |
| 18-01-25 | 3           | TS             | 304         | Introduction to Computer                   | Digital computer                                                  |
| 18-01-25 | 2           | AKR            | 305         | Linear Programming Problem                 | Convex sets                                                       |
| 20-01-25 | 4           | TS             | 304         | Introduction to Computer                   | Number systems                                                    |
| 21-01-25 | 5           | TS             | 304         | Introduction to Computer                   | Flow chart for simple statistical problems                        |
| 22-01-25 | 6           | TS             |             | C.T.                                       |                                                                   |
| 23-01-25 | 7           | TS             | 304         | Introduction to Computer                   | Flow chart for simple statistical problems                        |
| 24-01-25 | 8           | TS             | 304         | Introduction to Computer                   | Flow chart for simple statistical problems                        |
| 24-01-25 | 3           | AKR            | 305         | Linear Programming Problem                 | General LPP and their formulation                                 |
| 25-01-25 | 9           | TS             | 304         | Introduction to R                          | Installing R                                                      |
| 25-01-25 | 4           | AKR            | 305         | Linear Programming Problem                 | Solving LPP by Graphical Method                                   |
| 27-01-25 | 10          | TS             | 304         | Introduction to R Programming and R Studio | R as a Calculator                                                 |
| 28-01-25 | 11          | TS             | 304         | Introduction to R Programming and R Studio | Creating a data set, Understanding a data set                     |
| 29-01-25 | 12          | TS             |             | C.T.                                       |                                                                   |
| 30-01-25 | 13          | TS             | 304         | Data structure in R                        | Vector, Matrices, Arrays                                          |
| 31-01-25 | 14          | TS             | 304         | Data structure in R                        | Data Frames, Factors and Lists                                    |
| 31-01-25 | 5           | AKR            | 304         | Data structure in R                        | Simple matrix algebra in R                                        |
| 01-02-25 | 15          | TS             | 304         | Data structure in R                        | Simple matrix algebra in R                                        |
| 01-02-25 | 6           | AKR            | 305         | Linear Programming Problem                 | Solving LPP By Simplex Method                                     |
| 04-02-25 | 16          | TS             | 305         | Linear Programming Problem                 | Big-M Method                                                      |
| 05-02-25 | 17          | TS             | 305         | Linear Programming Problem                 | Two-Phase Method                                                  |
| 06-02-25 | 18          | TS             |             | C.T.                                       |                                                                   |
| 07-02-25 | 19          | TS             | 305         | Linear Programming Problem                 | Degeneracy and Duality in LPP                                     |
| 07-02-25 | 7           | AKR            | 305         | Linear Programming Problem                 | Degeneracy and Duality in LPP                                     |
| 08-02-25 | 20          | TS             | 304         | Data inputs in R                           | Entering data from the keyboard, importing Data                   |
| 08-02-25 | 8           | AKR            | 304         | Data inputs in R                           | Creating new variable , recording variable                        |
| 10-02-25 | 21          | TS             | 304         | Data inputs in R                           | Renaming variable, sorting Data , merging and sub setting dataset |
| 11-02-25 | 22          | TS             | 304         | Data inputs in R                           | Missing values, Descriptive Statistics                            |
| 13-02-25 | 23          | TS             |             | C.T.                                       |                                                                   |

|          |    |     |     |                                   |                                                   |
|----------|----|-----|-----|-----------------------------------|---------------------------------------------------|
| 14-02-25 | 24 | TS  | 305 | Transportation Problem            | North-west corner rule                            |
| 14-02-25 | 9  | AKR | 305 | Transportation Problem            | North-west corner rule                            |
| 15-02-25 | 25 | TS  | 305 | Transportation Problem            | Least cost Method                                 |
| 15-02-25 | 10 | AKR | 305 | Transportation Problem            | Least cost Method                                 |
| 17-02-25 | 26 | TS  | 305 | Transportation Problem            | Vogel's approximation method                      |
| 18-02-25 | 27 | TS  | 305 | Optimum Solution                  | Stepping stone method                             |
| 19-02-25 | 28 | TS  | 304 | Using R in Inferential Statistics | Parametric test, test for normality               |
| 20-02-25 | 29 | TS  |     | C.T.                              |                                                   |
| 21-02-25 | 30 | TS  | 304 | Using R in Inferential Statistics | t-test for single mean                            |
| 21-02-25 | 11 | AKR | 304 | Using R in Inferential Statistics | t-test for difference between means               |
| 22-02-25 | 31 | TS  | 304 | Using R in Inferential Statistics | Paired t-test                                     |
| 22-02-25 | 12 | AKR | 304 | Using R in Inferential Statistics | Test for equality of two variances                |
| 24-02-25 | 32 | TS  | 305 | Assignment Problem                | Hungarian Method                                  |
| 25-02-25 | 33 | TS  | 305 | Assignment Problem                | Balanced and Unbalanced                           |
| 27-02-25 | 34 | TS  | 305 | Assignment Problem                | Balanced and Unbalanced                           |
| 28-02-25 | 35 | TS  |     | TEST                              |                                                   |
| 28-02-25 | 13 | AKR | 305 | Assignment Problem                | Maximization Problems                             |
| 01-03-25 | 36 | TS  | 305 | Assignment Problem                | Travelling Sales man Problem                      |
| 01-03-25 | 14 | AKR | 304 | Using R/ SPSS                     | Wilcoxon signed rank test                         |
| 03-03-25 | 37 | TS  | 304 | Using R/ SPSS                     | Wilcoxon rank sum test                            |
| 04-03-25 | 38 | TS  | 304 | Using R/ SPSS                     | Mann Whitney U-Test                               |
| 05-03-25 | 39 | TS  | 304 | Using R/ SPSS                     | Kruskal wallis test                               |
| 06-03-25 | 40 | TS  | 304 | Using R/ SPSS                     | Analysis of variance                              |
| 07-03-25 | 41 | TS  |     | C.T.                              |                                                   |
| 07-03-25 | 15 | AKR | 304 | Using R/ SPSS                     | Linear regression, simple and multiple regression |
| 08-03-25 | 42 | TS  | 305 | Inventory Control                 | introduction                                      |
| 08-03-25 | 16 | AKR | 305 | Inventory Control                 | Different cost involved                           |
| 10-03-25 | 43 | TS  | 305 | Inventory Control                 | Different cost involved                           |
| 11-03-25 | 44 | TS  | 305 | Inventory Control                 | Factor affecting                                  |
| 17-03-25 | 45 | TS  | 305 | Inventory Control                 | EOQ Model without and with shortages              |
| 18-03-25 | 46 | TS  |     | TEST                              |                                                   |
| 19-03-25 | 47 | TS  | 304 | Numerical Analysis                | Error in numerical computations                   |
| 20-03-25 | 48 | TS  | 304 | Numerical Analysis                | Calculus of finite differences                    |
| 21-03-25 | 49 | TS  | 304 | Numerical Analysis                | Difference operators                              |
| 21-03-25 | 17 | AKR | 304 | Numerical Analysis                | Newton's forward interpolation formula            |
| 22-03-25 | 50 | TS  | 304 | Numerical Analysis                | Newton's backward interpolation formula           |
| 22-03-25 | 18 | AKR | 304 | Numerical Analysis                | Lagrange's interpolation formula                  |
| 01-04-25 | 51 | TS  | 305 | Job Sequencing                    | n jobs 2 machine                                  |
| 02-04-25 | 52 | TS  |     | C.T.                              |                                                   |
| 03-04-25 | 53 | TS  | 305 | Job Sequencing                    | n jobs 2 machine, n jobs k machine                |
| 04-04-25 | 54 | TS  | 305 | Job Sequencing                    | n jobs k machine, 2 jobs k machine                |
| 04-04-25 | 19 | AKR | 305 | Game Theory                       | Competitive game                                  |
| 05-04-25 | 55 | TS  | 305 | Game Theory                       | Two person zero sum game                          |

|          |    |     |     |                    |                                                               |
|----------|----|-----|-----|--------------------|---------------------------------------------------------------|
| 05-04-25 | 20 | AKR | 305 | Game Theory        | Minimax-Maximin criteria,<br>Saddle points                    |
| 07-04-25 | 56 | TS  | 304 | Numerical Analysis | Solution of algebraic and<br>transcendental equation          |
| 08-04-25 | 57 | TS  | 304 | Numerical Analysis | Direct and iterative methods                                  |
| 09-04-25 | 58 | TS  | 304 | Numerical Analysis | Bisection method, regula-falsi                                |
| 11-04-25 | 59 | TS  |     | C.T.               |                                                               |
| 11-04-25 | 21 | AKR | 304 | Numerical Analysis | Newton's - Raphson Method,<br>Iteration method                |
| 12-04-25 | 60 | TS  | 304 | Numerical Analysis | General Quadrature formula,<br>Trapezoidal rule               |
| 12-04-25 | 22 | AKR | 305 | Game Theory        | Solution of rectangular game<br>with and without saddle point |
| 15-04-25 | 61 | TS  | 305 | Game Theory        | Huge Rectangular game,<br>Dominance Rules                     |
| 16-04-25 | 62 | TS  | 305 | Game Theory        | Solution of huge rectangular<br>games using rule of dominance |
| 17-04-25 | 63 | TS  | 305 | Game Theory        | Graphical method for 2xn games<br>without saddle point        |
| 19-04-25 | 64 | TS  | 305 | Game Theory        | Graphical method for mx2 games<br>without saddle point        |
| 19-04-25 | 23 | AKR |     | C.T.               |                                                               |
| 21-04-25 | 65 | TS  | 304 | Numerical Analysis | Simpson's one third formula,<br>Simpsons three eight formula  |
| 22-04-25 | 66 | TS  | 304 | Numerical Analysis | Simpsons three eight formula,<br>Weddle's rule                |
| 23-04-25 | 67 | TS  | 304 | Revision           | Revision                                                      |
| 24-04-25 | 68 | TS  | 304 | Revision           | Revision                                                      |
| 25-04-25 | 69 | TS  | 304 | Revision           | Revision                                                      |
| 25-04-25 | 24 | AKR | 305 | Revision           | Revision                                                      |
| 26-04-25 | 70 | TS  | 305 | Revision           | Revision                                                      |
| 26-04-25 | 25 | AKR | 305 | TEST               |                                                               |
| 28-04-25 | 71 | TS  | 305 | Revision           | Revision                                                      |
| 29-04-25 | 72 | TS  | 305 | Revision           | Revision                                                      |
| 30-04-25 | 73 | TS  | 305 | Revision           | Revision                                                      |