## Outcome Based Syllabus for M.Sc. (Statistics) Semester Pattern in

## **Affiliated Colleges**

## **2021** Admission onwards

## **Course Structure and Marks distribution**

| Semester | Course Code | Course Title   | Hours/<br>Semester<br>( Theory | Instructional Hours<br>per week |           | Duration<br>of ESE<br>(In hours) | Total Marks |     |       |
|----------|-------------|--|--------------------------------|---------------------------------|-----------|----------------------------------|-------------|-----|-------|
| INO.     |             |  |                                |                                 |           |                                  | CA          | ESE | Total |
|          |             |  | +Practical)                    | Theory                          | Practical |                                  | CA          | ESE | Total |
| 1        | ST 211      | Analytical<br>Tools for<br>Statistics - I                      | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 212      | Analytical<br>Tools for<br>Statistics - II                     | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 213      | Probability<br>Theory - I                                      | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 214      | Sampling<br>Techniques   | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 215      | R and Python   | 54 + 36                        | 3                               | 2         | 3                                | 20          | 60  | 80    |
| 2        | ST 221      | Probability<br>Theory - II                                     | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 222      | Distribution<br>Theory   | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 223      | Applied<br>Statistics &<br>Numerical<br>Methods                | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 224      | Statistical<br>Quality<br>Control<br>&Reliability<br>Modelling | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 225      | Practical 1<br>Using R   | 90                             | -                               | 5         | 3                                | 20          | 60  | 80    |
| 3        | ST 231      | Theory of<br>Estimation  | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 232      | Testing of<br>Hypotheses                                       | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |
|          | ST 233      | Multivariate<br>Analysis                                       | 90                             | 5                               | -         | 3                                | 20          | 60  | 80    |

| 3           | ST 234             | Operations                        | 90 | 5 | - | 3 | 20 | 60 | 80   |
|-------------|--------------------|-----------------------------------|----|---|---|---|----|----|------|
|             |                    | Research                          |    |   |   |   |    |    |      |
|             | ST 235             | Elective I                        | 90 | 5 | - | 3 | 20 | 60 | 80   |
|             | ST 241             | Design and                        | 90 | 5 | - | 3 | 20 | 60 | 80   |
|             |                    | Analysis of                       |    |   |   |   |    |    |      |
|             |                    | Experiments                       |    |   |   |   |    |    |      |
|             | ST 242             | Stochastic                        | 90 | 5 | - | 3 | 20 | 60 | 80   |
| 4           |                    | Processes                         |    |   |   |   |    |    |      |
|             | ST 243             | Regression                        | 90 | 5 | - | 3 | 20 | 60 | 80   |
|             |                    | Methods                           |    |   |   |   |    |    |      |
|             | ST 244             | Elective II                       | 90 | 5 | - | 3 | 20 | 60 | 80   |
|             | ST 245             | Practical 2                       | 90 | - | 5 | 3 | 20 | 60 | 80   |
|             |                    | Using R                           |    |   |   |   |    |    |      |
|             | ST 246             | Project/ Dissertation/ Internship |    |   |   |   |    |    | 100* |
|             | Comprehensive Viva |                                   |    |   |   |   |    |    |      |
| Grand Total |                    |                                   |    |   |   |   |    |    |      |

Abbreviations used: ESE- End Semester Exam, CA- Continuous Assessment.

\*80 marks for Project/ Dissertation/ Internship and 20 marks for viva voce examination based on it

\*\* General viva voce based on all the courses.

**Elective Papers** 

III Semester- Elective –I ST(235)

- 1. Machine Learning
- 2. Order Statistics
- 3. Biostatistics

IV Semester- Elective –I I ST(235)

- 1. Time Series and Forecasting
- 2. Bayesian Inference
- 3. Actuarial Statistics

During Semester 3, the Elective paper has to be chosen from among the three papers given and during semester 4, the Elective paper has also to be chosen from among the three papers given.