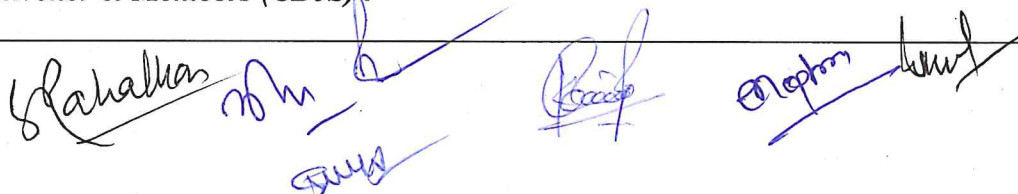


**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF ZOOLOGY**  
**COURSE CURRICULUM**

| <b>PART- A: Introduction</b>   |   |  |   |
|--|---|--|---|
| <b>Program: Bachelor in Life Science</b><br><i>(Honors/ Honors with Research)</i>  |   | <b>Semester - VIII</b>   | <b>Session: 2024-2025</b>                             |
| 1  | Course Code   | ZOSE- 09T  |   |
| 2  | Course Title  | Basics of Computer and Biostatistics   |   |
| 3  | Course Type   | Discipline Specific Elective   |   |
| 4  | Pre-requisite (if, any)   | <i>As per Program</i>  |   |
| 5  | Course Learning Outcomes (CLO)  | <p><b>After successfully completing this course, the students will be able to:</b></p> <ul style="list-style-type: none"> <li>➤ Understand the computer, its applications and use in biostatistics.</li> <li>➤ Understand collection of biological data and analysis of the data.</li> <li>➤ Learn about how the statistical data present.</li> <li>➤ Developed critical thinking to analyze and represent the significance of the statistical data.</li> <li>➤ Apply the knowledge in future for Research.</li> </ul> |   |
| 6  | Credit Value  | <b>3 Credits</b>   | <i>Credit = 15 Hours - learning &amp; Observation</i> |
| 7  | Total Marks   | Max. Marks: 100  | Min Passing Marks: 40                                 |
| <b>PART -B: Content of the Course</b>  |   |  |   |
| Total No. of Teaching-learning Periods (01 Hr. per period) - 45 Periods (45 Hours) |   |  |   |
| Unit   | Topics (Course contents)  |  | No. of Period   |
| <b>I</b>   | <b>Unit-I: Computer structure and Applications:</b> History of Computers, Structure of Computers, Classification of Computers, Introduction to digital computer- basic knowledge of hardware & software, CPU, Input and Output devices, Computer Codes: Decimal System, Binary number system, hexadecimal system, octal system, conversion of numbers. Introduction to MS Office- MS Word, MS Excel, MS Power point, Introduction of Internet, web-mail, various search engine, Plagiarism, Artificial Intelligence (AI). |  | 12  |
| <b>II</b>  | <b>Unit-II: Data collection, presentation, and Measures of central tendency:</b> Collection and classification of data. Presentation of data: by Tables - rules for making tables, use of tables, Types of tables, By Graphs: rules for making graph & it's uses, Pie chart, Bar diagram, Histogram, Frequency polygon, Cumulative frequency curve (Ogive and Polygon). Measures of central tendency: Arithmetic Mean, Median, Mode.  |  | 11  |
| <b>III</b>   | <b>Dispersion Correlation and Regression:</b> Measures of dispersion: Standard deviation and Standard error. Correlation: Types, significance and application of correlation, calculation of correlation in continuous data and ordinal data. Regression: Linear regression, regression coefficient.  |  | 11  |
| <b>IV</b>  | <b>Probability and Analysis of Significant Test:</b> Probability: normal, binomial distribution and Poisson distributions. Hypothesis testing, Test of significance: Paired and unpaired t-test and Chi square test. Analysis of Variance (one & two way ANOVA).  |  | 11  |
| <i>Keywords</i>  | <i>Computer, MS Word, MS Excel, MS Power point, web-mail, central tendency, ANOVA, Hypothesis testing</i>   |  |   |
| <b>Signature of Convener &amp; Members (CBoS):</b>                                 |   |  |   |



## PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Text Books Recommended –

- Balagurusamy, E. (2011) Fundamentals of Computers, McGraw Hill Education, Rajaraman, V.: Fundamentals of Computers, 5th edition, PHI Learning Pvt. Ltd., 2010
- Sinha, P., Sinha, P.K. (2004), Computer Fundamentals: Concepts, Systems and Applications, 8th edition, BPB Publications.
- Khanal, A.B. (2015 ), Mahajan's Methods in Biostatistics, The Health Sciences Publishers,

#### Reference Books Recommended –

- Daniel, W.W. (2012) Biostatistics: A Foundation for Analysis in Health Sciences(10th edition) John Wiley.
- Milton, J.S. & Tsokos, J.O. (1992) Statistical Methods in the Biological and Health Sciences (2<sup>nd</sup> edition) McGraw Hill.
- Zar, JH, (2010), Biostatistical Analysis, Prentice-Hall/Pearson, 2010.

### Online Resources–

#### National Digital Library

- <https://drive.google.com/file/d/1EaBH4SfE4AcdmoDzQ7iFwMSJkmSfIQet/view>
- <http://ndl.iitkgp.ac.in/he document/swayam ugc moocs/swayam ugc moocs/IN S U M 1 P C 3 B a M B 233 234?e=2|biostatistics||>
- <http://ndl.iitkgp.ac.in/he document/bharat skills/bharat skills/01 2434?e=0|basic%20computer||>

## PART -D: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:

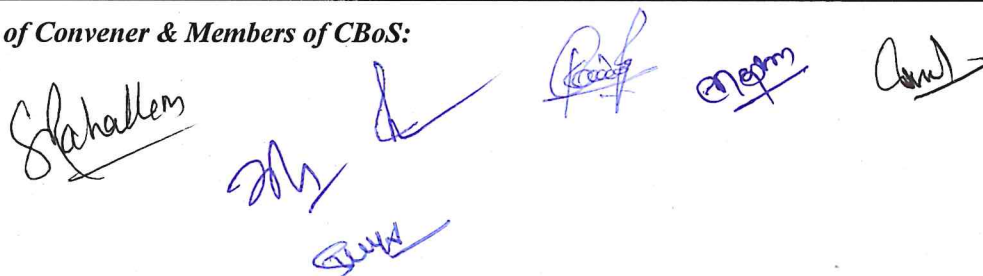
Maximum Marks: 100 Marks

Continuous Internal Assessment (CIA): 30 Marks

End Semester Exam (ESE): 70 Marks

|   |   |  |
|---|---|--|
| <b>Continuous Internal Assessment (CIA):</b><br>(By Course Teacher) | Internal Test / Quiz-(2): 20 +20  | Better marks out of the two Test / Quiz<br>+ obtained marks in Assignment shall be considered against 30 Marks |
|   | Assignment / Seminar - 10   |  |
|   | Total Marks - 30  |  |
| <b>End Semester Exam (ESE):</b>                                     | Two section – A & B<br>Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20 Marks<br>Section B: Descriptive answer type qts., 1out of 2 from each unit-4x10=40 Marks |  |

Name and Signature of Convener & Members of CBoS:





**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF ZOOLOGY**  
**COURSE CURRICULUM**

| <b>PART- A: Introduction</b>  |  |   |   |
|---|--|---|---|
| <b>Program: Bachelor in Life Science</b><br><i>(Honors/ Honors with Research)</i> |  | <b>Semester - VIII</b>  | <b>Session: 2024-2025</b>                                     |
| 1   | <b>Course Code</b>   | ZOSE-09P  |   |
| 2   | <b>Course Title</b>  | <b>Basics of Computer and Biostatistics</b>   |   |
| 3   | <b>Course Type</b>   | Discipline Specific Elective Lab Course   |   |
| 4   | <b>Pre-requisite (if, any)</b>   | <i>As per Program</i>   |   |
| 5   | <b>Course Learning Outcomes (CLO)</b>  | <p>After successfully completing lab course the students will be able to</p> <ul style="list-style-type: none"> <li>➤ Understand the computer, its applications and use in biostatistics practically.</li> <li>➤ Understand and learn collection of biological data and analyzes them.</li> <li>➤ Learn to present and interpret the analyzed data.</li> <li>➤ Developed critical thinking to assess the significance of the statistical data and discuss the result.</li> <li>➤ Apply the knowledge in future for Research.</li> </ul> |   |
| 6   | <b>Credit Value</b>  | 1 Credits   | <i>Credit =30 Hours Laboratory or Field learning/Training</i> |
| 7   | <b>Total Marks</b>   | <b>Max. Marks: 50</b>   | <b>Min Passing Marks: 20</b>                                  |
| <b>PART -B: Content of the Course</b>   |  |   |   |
| Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)         |  |   |   |
| Module  | Topics (Course contents)   |   | No. of Period   |
| <b>Lab./Field Training/ Experiment Contents of Course</b>                         | <p style="text-align: center;"><b>List of labs to be conducted</b></p> <ul style="list-style-type: none"> <li>➤ Exercise based on Microsoft word.</li> <li>➤ Study of hardware &amp; software.</li> <li>➤ PPT Slide preparation using Microsoft Power Point.</li> <li>➤ Data collection.</li> <li>➤ Analyzing Data manually and through computer: Mean, Median, Mode, SD, SE, Correlation and regression and its interpretation.</li> <li>➤ Tabular &amp; Graphical presentation of data manually and using excel.</li> <li>➤ Hypothesis testing by <i>t</i>-test, Chi-square test and ANOVA.</li> <li>➤ Group discussion/Quiz/Seminar presentation on related topics.</li> <li>➤ Practical Record or Lab assignment.</li> </ul> |   | <b>30</b>   |
| <b>Keywords</b>   | <i>Graphical presentation, hardware &amp; software, Microsoft Power Point, Microsoft word.</i>   |   |   |
| <b>Signature of Convener &amp; Members (CBoS):</b>                                |  |   |   |

## PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Text Books Recommended –

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- Sinha, P., Sinha, P.K. (2004), Computer Fundamentals: Concepts, Systems and Applications, 8th edition, BPB Publications.
- Khanal, A.B. (2015 ), Mahajan's Methods in Biostatistics, The Health Sciences Publishers,

#### Reference Books Recommended –

- Daniel, W.W. (2012) Biostatistics: A Foundation for Analysis in Health Sciences(10th edition) John Wiley.
- Milton, J.S. & Tsokos, J.O. (1992) Statistical Methods in the Biological and HealthSciences (2<sup>nd</sup> edition) McGraw Hill.
- Zar, JH, (2010), Biostatistical Analysis, Prentice-Hall/Pearson, 2010.

#### Online Resources–

- [http://ndl.iitkgp.ac.in/he\\_document/libretexts/libretexts/ee0516013368a11b75812bda4e208f6?e=0|MEAN%20MODE%20MEADIAN||](http://ndl.iitkgp.ac.in/he_document/libretexts/libretexts/ee0516013368a11b75812bda4e208f6?e=0|MEAN%20MODE%20MEADIAN||)

## PART -D: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

|   |   |  |
|---|---|--|
| <b>Continuous Internal Assessment (CIA):</b><br>(By Course Teacher) | Internal Test / Quiz-(2): 10 & 10   | Better marks out of the two Test / Quiz<br>+ obtained marks in Assignment shall be considered against 15 Marks |
|   | Assignment/Seminar +Attendance - 05<br>Total Marks - 15   |  |
| <b>End Semester Exam (ESE):</b>                                     | <b>Laboratory / Field Skill Performance: On spot Assessment</b>   |  |
|   | A. Performed the Task based on lab. work - 20 Marks   | Managed by<br>Course teacher<br>as per lab. status   |
|   | B. Spotting based on tools & technology (written) – 10 Marks<br>C. Viva-voce (based on principle/technology) - 05 Marks |  |

Name and Signature of Convener & Members of CBoS:

*(Handwritten signatures in blue ink)*