

Semester Lecture Plan

Name of College: Government College of Arts, Science & Commerce, Sanquelim Goa

Name of Faculty: Dr. Vaibhav Chindarkar

Subject: Zoology

Paper code: ZOO 321

Program/Course: Biostatistics & Data analytics

Division: A

Academic year: 2026 - 2027

Semester: V

Total Lectures: 45

Course Objectives: 1. Learn the fundamental concepts of data and methods of data collection.

2. Acquaint the learners with the basic principles of biostatistics and data analytics.

3. Perform and interpret statistical analysis.

4. Provide skills to the learners for the analysis of data.

Expected Course Outcome: At the end of this course, students will be able to:

1. Gain insights into types of data and data collection.

2. Collect valid data for the purpose of stated research questions and testing hypothesis.

3. Identify appropriate sampling and data representation methods.

4. Apply appropriate statistical tools for data analysis.

Month	Lectures From: To:		No. of lectures allotted	Topic, Subtopic to be covered	ICT Tools	Reference books
June	19/06/2026	20/06/2026	Nil		Power point presentation	
July	22/06/2026	27/06/2026	03		Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.
	29/06/2026	04/07/2026	03		Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004.

	06/07/2026	11/07/2026	03	L7 Quartiles and Quintiles L8 Deciles and Percentiles L9 Range and Quartile Deviation	Power point presentation	3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012. 1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012. 1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999.
	13/7/2026	18/7/2026	03	L10 Mean Deviation L11 Variance and Standard Deviation L12 Big Data in Zoology	Power point presentation	

August	03/08/2026	08/08/2026	03	L19 Stratified/Systematic/Cluster Sampling L20 Multi-stage Sampling L21 Non-probability Sampling	Power point presentation	3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012. 1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.
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	10/08/2026	15/08/2026	03	L22 Convenience, Judgmental, Quota, Snowball Sampling L23 Sample Size Estimation L24 Sampling and Non-sampling Errors	Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.
	17/08/2026	22/08/2026	03	L25 Design of Experiments L26 Importance of Controls L27 Types of Data Distribution	Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.

	24/08/2026	29/08/2026	03	L28 Frequency Distribution L29 Data Summarisation L30 Module II Revision	Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.
	31/08/2026	05/9/2026	03	L31 Data as Text and Tables L32 Scatter and Line Graphs L33 Bar, Multi-column and Pie Graphs	Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.

September	07/9/2026	12/9/2026	03	L34 Meaning of P value L35 Parametric and Non-parametric Tests L36 Statistical Inference	Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.
	21/9/2026	26/9/2026	03	L37 Null and Alternative Hypotheses L38 Chi-square Test L39 Student t-test	Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.

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	28/9/2026	3/10/2026	03	L40 Z-test L41 F-test and ANOVA L42 Coefficient of Variation	Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.
October	5/10/2026	10/10/2026	03	L43 Correlation L44 Regression L45 Introduction to R, Excel and SPSS	Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.

	12/10/2026	14/10/2026	03	Overall Revision / Buffer	Power point presentation	1. A. P. Gore, and S. A. Paranjpe, A course on Mathematical and Statistical Ecology, Kluwer Academic Publishers, 2001. 2. C.R. Kothari, Research Methodology: Methods and Techniques, 2nd Edition, New Age International Publishers, 2004. 3. J. H. Zar, Biostatistical Analysis, Pearson Education India, 1999. 4. N. Gurumani, Research Methodology for Biological Sciences, MJP Publishers, 2008. 5. P. Legendre, and L. Legendre, Numerical Ecology - 3rd Edition. Elsevier, 2012.
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