

## Lecture Plan

**Name of the College: Government College of Arts, Science and Commerce. Sanquelim- Goa**

**Name of Faculty: Dr. Suphala Pujari and Ms. Ayesha Shetkar**

**Subject: Zoology**

**Paper code: ZOD 101**

**Program: T.Y. BSc**

**Division: A**

**Academic year: 2024- 2025**

**Semester: V**

**Total Lectures: 45**

**Course Objectives: To understand the basic principles in research methodology and biostatistics**

**Expected Course Outcome: Students will gain knowledge on conducting research and data analysis. Students will also know how to report research effectively in a scientific manner**

**Student Learning Outcome: Students will gain knowledge on conducting research and data analysis. Students will also know how to report research effectively in a scientific manner.**

| Month | Lecture From | Lecture To | No. of lectures allotted | Topic, Subtopic to be covered   | Exercise/ Assignment | ICT Tools                | Reference books  |
|-------|--------------|------------|--------------------------|---|----------------------|--------------------------|--|
| June  | 28/06/2024   | 29/06/2024 | 1                        | Unit 1: Foundation of Research : Meaning, Objectives, Motivation:             |                      | Power point presentation | <ul style="list-style-type: none"> <li>Anthony M, Graziano, A. M. and M. L. Raulin (2009) Research Methods: A Process of Inquiry, Allyn and Bacon</li> <li>Walliman, N. (2011) Research</li> </ul> |
| July  | 01/07/2024   | 06/07/2024 | 3                        | Research Methods vs Methodology, Types of Research: Analytical vs Descriptive |                      | Power point presentation |  |
| July  | 08/07/2024   | 13/07/2024 | 3                        | Types of Research: Quantitative vs Qualitative, Basic vs Applied              |                      | Power point presentation |  |

|             |            |            |   |   |  |                          |   |
|-------------|------------|------------|---|---|--|--------------------------|---|
|             |            |            |   | Need for research design: Features of a good design, Important concepts related to good design- Observation and Facts, Prediction and Explanation   |  |                          | <p>Methods: The Basics. Taylor and Francis, London, New York</p> <ul style="list-style-type: none"> <li>• Wadhera, B. L (2002) Law Relating to Patents, Trademarks, Copyright Designs and Geographical</li> <li>• Indications, Universal Law Publishing</li> <li>• Kothari, C. R (2009) Research Methodology, New Age International, New Delhi</li> <li>• Coley, S. M. and C. A. Scheinberg (1990) Proposal Writing. Stage Publications</li> <li>• Arora, P. N. and P. L. Malhan (2003) Biostatistics. Himalaya Publications, Mumbai</li> </ul> |
| July        | 15/07/2024 | 20/07/2024 | 3 | Development of Models. Developing a research plan: Problem identification, Formulating hypotheses   |  | Power point presentation |   |
| July        | 22/07/2024 | 27/07/2024 | 3 | Experimentation, Determining experimental and sample designs  |  | Power point presentation |   |
| July/August | 29/07/2024 | 03/08/2024 | 3 | Unit 3: Data Collection, Analysis and Report Writing : Observation and Collection of Data-Methods of data collection  |  | Power point presentation |   |
| August      | 05/08/2024 | 10/08/2024 | 3 | Sampling Methods, Data Processing and Analysis strategies   |  | Power point presentation |   |
| July/August | 12/08/2024 | 17/08/2024 | 1 | Technical Reports   |  | Power point presentation |   |
| August      | 19/08/2024 | 24/08/2024 | 3 | Thesis writing, Preparation of Tables   |  | Power point presentation |   |
| August      | 26/08/2024 | 31/08/2024 | 3 | Preparation of Bibliography, Data Presentation using digital technology<br>Unit 4: Biostatistics : Brief introduction to biostatistics- Meaning, functions and importance.  |  | Power point presentation |   |
| September   | 02/09/2024 | 05/09/2024 | 3 | Statistical tools: Mean, Median, Mode, Standard Deviation, Standard Error.  |  | Power point presentation |   |
| September   | 16/09/2024 | 21/09/2024 | 3 | Correlation, Regression, Chi-Square test, Student's t-test,   |  | Power point presentation |   |
| September   | 23/09/2024 | 28/09/2024 | 3 | Fisher's test, ANOVA  |  | Power point presentation |   |
| September   | 30/09/2024 | 05/10/2024 | 3 | Unit 5: Introduction to Biostatistical Software :Use of computers for data analysis, Significance of biostatistical software; understanding various statistical software packages such as Microsoft Excel and SPSS. |  | Power point presentation |   |

|         |            |            |   |  |  |                          |  |
|---------|------------|------------|---|--|--|--------------------------|--|
| October | 7/10/2024  | 12/10/2024 | 3 | understanding various statistical software packages such as Microsoft Excel and SPSS, contd.<br>Interpreting outputs of statistical analyses<br>Unit 6: Ethical Issues: Intellectual property rights, Commercialization, |  | Power point presentation |  |
| October | 14/10/2024 | 19/10/2024 | 3 | Copyright, Royalty, Patent law, Plagiarism   |  |                          |  |
| October | 21/10/2024 | 22/10/2024 | 1 | Citation, Acknowledgement  |  |                          |  |

**\* Assessment Rubrics**

| Component         | Max Marks |
|-------------------|-----------|
| ISA 1             | 08        |
| ISA 2             | 07        |
| Practical         | 25        |
| Project           | -         |
| Semester End Exam | 60        |