



MASTER OF PHILOSOPHY IN ZOOLOGY

SYLLABUS SESSION 2013-14

CURRICULUM

S. No	Code	Papers	Max. Marks	Ex. Hrs.
1	MPZO 101	Research Methodology	100	3
2	MPZO 101	Environmental Biology	100	3
3	MPZO 101	Specialization on dissertation topic	100	3
4	MPZO 101	Dissertation	100	-

RESEARCH METHODOLOGY THEORY AND TECHNIQUES

MPZO 101

(Bio Technology, Biochemistry, Botany, Chemistry, Commerce, Computer Science, Corporate Secretaryship, Education, Education, Electronics, Information Technology, Microbiology, Home Science, Hotel Management, Hotel Management, Library Science, Management, Physics, Population Studies, Psychology, Public Administration, Social Work, Sociology, Tourism Management, Zoology)

Unit - I

Research – Definition – Importance and Meaning of research – Characteristics of research – Types of Research – Steps in research – Identification, Selection and formulation of research problem – Research questions – Research design – Formulation of HypoDissertation – Review of Literature.

Unit – II

Sampling techniques: Sampling theory – types of sampling – Steps in sampling – Sampling and Non-sampling error – Sample size – Advantages and limitations of sampling. Collection of Data : Primary Data – Meaning – Data Collection methods – Secondary data – Meaning – Relevances, limitations and cautions.

Unit – III

Statistics in Research – Measure of Central tendency – Dispersion – Skewness and Kurtosis in research. HypoDissertation – Fundamentals of HypoDissertation testing – Standard Error – Point and Interval estimates – Important Non-Parametric tests : Sign, Run, Kruskal – Wallis tests and Mann-Whitney test.



Unit – IV

Para metric tests: Testing of significance – mean, Proportion, Variance and Correlation – testing for Significance of difference between means, proportions, variances and correlation co-efficient. Chi-square tests – ANOVA – One-way and Two-way.

Unit – V

Research Report: Types of reports – contents – styles of reporting – Steps in drafting reports – Editing the final draft – Evaluating the final draft.

Reference Books:

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| 1. Statistical Methods | S.P. Gupta |
| 2. Research Methodology Methods and Techniques | C.R. Kothari |
| 3. Statistics (Theory and Practice) | B.N. Gupta |
| 4. Research Methodology Methods and Statistical Techniques | Santosh Gupta |

ENNVIRONMENTAL BIOLOGY MPZO 102

Unit – I

Environmental Biology – Introduction, Biotic and A biotic factors of environment – Relationship among organisms, Animal Biodiversity

Unit – II

Ecosystem – Components, characteristics, Energy flow in ecosystem – Tropic levels. Chain, food web – Ecological Pyramids – Man and Biosphere – Environmental education

Unit – III

Population ecology – Population characteristics – Population control – Community – Characteristics, components.

Unit – IV

Environmental pollution – In fresh water ecosystem – sources, assessment of pollution (BOD, COD) – In marine ecosystem – Sources, impart of pollution in fisheries – In terrestrial environment – Solid wastes and non-degradable wastes.



Unit – V

Management of pollution – Sewage treatment, industrial effluent treatment, solid waste, liquid wastes, organic recycling, Biogas production, fish culture, algae production, Bio-compost. Restoration habitat – remote sensing, afforestation – mangroves, Artificial roots.

Reference Books:

1. Sharma, P.D. Ecology & Environment – Meerut: Rastogi Publications, Meerut, 1990.
2. Manivasakam, “Environmental Pollution”, New Delhi, Natural Book Trust of India, 1984.
3. Dara. S.S. - Text Book of Environmental chemistry & Pollution control. S.Chand & Company.
4. Biswarup Mukerjee. Environmental Biology



