



D. K. GOVERNMENT COLLEGE FOR WOMEN

Nellore, Andhra Pradesh- 524003

Autonomous College, College with Potential for Excellence

Re-accredited with "A" Grade by NAAC



Department of Zoology

III B. Sc. ZOOLOGY SEMESTER VI

PRACTICAL SYLLABUS

CLUSTER ELECTIVE PAPER: VIII-B

VI SEMESTER 2020-21

PRACTICAL –III (PROJECT)

RESEARCH METHODOLOGY

Unit 1

Literature Survey- Identification of Problem-Origin of problem, Formulation and Validation of Hypothesis-Designing experimental techniques for validating the hypothesis. Animal Rights and Animal Ethics: Guidelines by Committee for the purpose of Control and Supervision of Experiments on Animals (CPCSEA).

Unit: 2

Characterization of bio molecules: Introduction and various approaches for characterization of Bio molecules Electrophoresis-Principles and applications, Centrifugation- Principles and applications, Chromatography-Principles and applications, Spectroscopy-Principles and applications.

PROJECT- MARKS ASSESSMENT

1. Research Methodology-Theory-	20 marks
2. Viva voce	10 marks
3. Project report submission	20 marks

Total 50 marks



Principal

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Department of Biotechnology
III B. Sc. BIOTECHNOLOGY SEMESTER VI

PRACTICAL SYLLABUS
CLUSTER ELECTIVE PAPER: VIII-B

VI SEMESTER 2020-21

PRACTICAL –III (PROJECT)

RESEARCH METHODOLOGY

Unit: 1

Literature Survey- Identification of problem-Origin of problem, Formulation and Validation of hypothesis-Designing experimental techniques for validating the hypothesis. Test of Hypothesis, chi square test, T- test, Significance of statistical methods

Unit: 2

Important procedures in Biological investigations:

Isolation and estimation procedures for DNA & RNA, AGE & SDS PAGE principle and applications, recovery of nucleic acid.

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Department of Chemistry

BOS-Chemistry 2021-22

A Career Oriented Certificate Course

On

Research Methodology

Learning Outcomes:

At the end of the course the students will be able to

- Understand the concept of research and different types of research in the context of biology
- Develop laboratory experiment related skills.
- Develop competence on data collection and process of scientific documentation.
- Analyze the ethical aspects of research.
- Evaluate the different methods of scientific writing and reporting.

- Suitable for: Future Research purpose
- Pre-requisites: Inter Passed Women Students
- Course Syllabus: 3 units (Theory and Practical's)
- Coursework: Self-study + tutor graded
- Duration: 60 hours
- Fee: Free
- Enrolment period: June to July 2022

Syllabus

Unit-I

Basic concepts of research:

15 hours

Research definition and types of research

(Theoretical, fundamental, analytical, qualitative, quantitative, conceptual, empirical, and Applied) research methods and methodology. Literature review and its

Consolidations, Library research and Laboratory research.

Unit-II

15 hours

Data collection and Documentation of observations:

Maintaining a laboratory record, tabulation and generation of graphs.

Imaging of tissue specimens and application of scale bars.

Unit-III

30 hours

Chemical structures drawing software.

Learning about chemical structure drawing tools/software

-Chemdraw

-ACD- Advanced chemistry developments/ chemsketch




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Department of Mathematics

B.Sc. THIRD YEAR SEMESTER – VI

Cluster Elective- VIII-A-3: RESEARCH METHODOLOGY
(PROJECT WORK)

(40 hours)

UNIT-I: The Transportation Model :

Transportation problem: Mathematical formulation, IBFS of transportation problem using north-west corner rule, least-cost rule and Vogel's approximation method, Unbalanced Transportation problem, Simple problems.

UNIT-II : The Assignment Model :

Assignment problem, definition, mathematical formulation of assignment problem, solution of assignment problem using Hungarian algorithm, unbalanced assignment problem, simple problems.

Research areas:

1. Optimization models in Transportation models
2. Alternate optimal solutions of Transportation problem
3. Extensions of Transportation models
4. Optimization models in Assignment problems
5. Alternate solutions of assignment problems

Internal Evaluation (100 marks)

Project work : 60 marks

Viva : 20 marks

Seminar presentation : 20 marks




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