



CRITERION I - CURRICULAR ASPECTS

1.3 Curriculum Enrichment

1.3.2 Certificate Courses/Value-added Courses

Value added Courses

Department of Zoology 2022-2023

Syllabus

- 1. Handling and Maintenance of Microscopes**
- 2. Bioinformatics Tools for Protein Analysis**
- 3. Beekeeping - a sweet revolution initiative**
- 4. Microbes Isolation and Characterization**
- 5. English Grammar for Biologists**

**GOVERNMENT COLLEGE FOR WOMEN
(AUTONOMOUS)**



KUMBAKONAM – 612 001


(Reaccredited with "B" Grade by NAAC)
(DST – CURIE Sponsored Institution)



**VALUE ADDED COURSE
HANDLING AND MAINTENANCE OF MICROSCOPES
DEPARTMENT OF ZOOLOGY**

Syllabus

- Lecture 1: Introduction to the Microscope
- Lecture 2: Types of Microscopes
- Lecture 3: Slide preparation
- Lecture 4: Fixation
- Lecture 5: Staining of sample techniques
- Lecture 6: Mounting of sample
- Lecture 7: Labelling and Storage of slides
- Lecture 8: Plant preserving techniques
- Lecture 9: Applications of Microscopy in Biological Sciences


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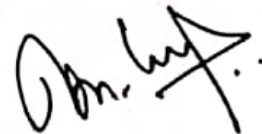
DEPARTMENT OF ZOOLOGY

VALUE ADDED COURSE - BEE KEEPING

2022-2023

COURSE CONTENTS

- ❖ Bees and Pollination
- ❖ Bees and the Economy
- ❖ Becoming a Beekeeper
- ❖ Bee hive management strategies
- ❖ Colony nest requirement
- ❖ Products of Bee hives and Honey bees



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VALUE ADDED COURSE – ENGLISH GRAMMER FOR COMMUNICATION

2022-2023

COURSE CONTENTS

- Sentence with biological example
- Parts of speech with biological example
- Tense
- Usage of Active voice and Passive voice
- Letter writing
- Scientific report writing
- Research Article writing



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Department of Zoology

Value added course

Bioinformatics tools for protein analysis

Objectives: To learn about visualize compare predict and design protein structures using Computational methods and data.

1. Retrieval and analysis of a gene sequence – FASTA format
2. Similarly search using BLAST and Interpretation of results
3. Pairwise and multiple sequence alignment using BLAST
4. Tertiary protein structure analysis using RASMOL
5. Pairwise sequence alignment and multiple sequence alignment using clustalw.



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VALUE ADDED COURSE – (2022-2023)

MICROBES ISOLATION AND CHARACTERIZATION

COURSE CONTENTS

1. Bacteria stabilization and simple staining method
2. Gram staining technique in bacteria
3. Identification of Positive and Negative Bacteria
4. Preparation of Agar plate in different medium
5. Sterilization methods
6. Methods for Bacteria culture
7. Counting of Bacteria by serial dilution method
8. Antibacterial activity by inhibitions zone methods
9. Identification of microbes in soil and air
10. Pure culture method



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