

CHHINDWARA UNIVERSITY, CHHINDWARA

SYLLABUS PRESCRIBED FOR THE DEGREE OF MASTER OF SCIENCE IN
MICROBIOLOGY

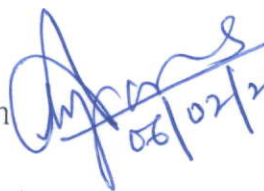
(Academic Session 2019 – 2020 & Onwards)
[UNDER SEMESTER EXAMINATION AT PG LEVEL]

FOURTH SEMESTER

DISSERTATION	Max Marks	Min. Marks for Passing	Min. Aggr Marks For Passing
A. Valuation			
(i) Language & Presentation	50	80	
(ii) Review of Literature	50		
(iii) Methodology	50		
(iv) Analysis & interpretation of Result	50		
B. Viva-Voce EXTERNAL	100		
C. Viva-Voce INTERNAL	50	60	
Total	350		140

Board of Studies

Prof. Anjana Sharma – Chairman


06/02/2020

Prof. Satish Chile - Subject Expert

Prof. Akhilesh Ayachi - Subject Expert



Prof. Hemant Verma - Subject Expert

Prof. Nikhil Kanungo - Subject Expert


COURSES OF STUDY IN M.Sc. MICROBIOLOGY

FOURTH SEMESTER

DISSERTATION
A. Valuation
(i) Language & Presentation
(ii) Review of Literature
(iii) Methodology
(iv) Analysis & interpretation of Result
B. Viva-Voce

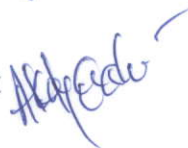
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CHINDWARA UNIVERSITY, CHINDWARA
M. Sc. Second Semester (Microbiology) 2019-20

Suggested list of practicals

Course V Molecular Biology and Recombinant DNA Technology

1. Isolation of genomic DNA from bacterial culture .
2. Extration of genomic DNA from fungal culture.
3. To study the lethal effect of UV ratiations on growthof microorganisms.
4. To study the effect of Dark repair and photo repair.
5. To estimate the purity of isolated DNA .
6. Determinationof growth of bacteria .
7. Prepration of growth curve of *E.coli*.
8. Effect of Temperature on Growth of Bacteria.
9. Effect of pH on Growth of Bacteria.
10. Measurement of fungal growth by dry weight method.
11. To study isolation of fungi from soil by Warcup's method.
12. Isolation of VAM spores from soil.
13. Identification of Fungi by slide culture.
14. Preparation of wet mount and dry mount slide.
15. Measurement of fungal growth of mycelia dry weight estimation.
16. Study of permanent slide of Fungi.
17. To study Lactophenol and cotton blue mounting of Fungi.

Course VI Optional A

Biostatistics and Computer Application

1. Representation of Statistical data by a) Histograms b) Pie diagrams
2. Determination of Statistical averages/ central tendencies. a) Arithmetic mean b) Median c) Mode
3. Determination of measures of Dispersion a) Mean deviation b) Standard deviation and coefficient of variation.c) Quartile deviation
4. Tests of Significance-Application of following a) Chi- Square test b) t- test c) Standard error
5. Computer operations-getting acquainted with different parts of Computers. [DOS] and basics of operating a computer.
6. Creating files, folders and directories.
7. Applications of computers in biology using MS-Office.
A] MS-Word B] Excel C] Power Point
8. Creating an e-mail account, sending and receiving mails.
9. An introduction to INTERNET, search engines, websites, browsing and Downloading.


06/02/2020



Course VI Optional B

Virology

1. Estimation of chlorophyll in healthy and diseased cyanobacterial sample.
2. Performance of double agar layer technique.
3. Estimation of protein in healthy and diseased cyanobacterial sample.
4. Study of plant viral disease:
 - Tobacco mosaic
 - Cucumber mosaic
 - Yellow Vein mosaic of ladyfinger
 - Leaf Curl of Papaya
5. Study of human viral disease:
 - Human Immunodeficiency Virus (HIV)
 - Hepatitis

Course VII Optional A

Microbial Genetics

1. To perform conjugation.
2. To study the effect of UV radiated on Bacterial cells.
3. To study the dark repair mechanism and photo repair mechanism in the UV radiated bacterial cells.
4. To perform replica plating of bacterial cells.
5. To study effect of mutagens (Nitrous acid) on bacterial cells.
6. 1. Purification of chromosomal / plasmid DNA and study of DNA profile:
7. Confirmation of nucleic acid by spectral study.
8. Quantitative estimation by diphenylamine test.
9. DNA denaturation and determination of T_m and G+C content.

Course VII Optional B

Mycology

1. To study isolation of fungi from soil by Warcup's method.
2. Isolation of VAM spores from soil.
3. Identification of Fungi by slide culture.
4. Preparation of wet mount and dry mount slide.
5. Measurement of fungal growth of mycelia dry weight estimation.
6. Study of permanent slide of Fungi.
7. To study Lactophenol and cotton blue mounting of Fungi.


06/02/2020




Course VIII Microbial Metabolism

1. Determination of Bacterial growth by turbidity measurements (spectrophotometric method).
2. Study of effect of temperature on growth of bacteria.
3. Study of effect of pH on growth of Bacteria.
4. Isolation of rhizobia from root nodules.
5. Slide culture technique for studying morphology and molds.

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56/07/2020

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