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ENVIRONMENTAL SCIENCE SYLLABUS M.Phil (2015-2016)
SCHEME OF PAPERS AND MARKS FOR M.PHIL. IN
ENVIRONMENTAL SCIENCE

Session 2015-2016

Semester I:

Paper I: Biostatistics, computer and research methodology

Theory :	80
Seminar + Internal test (10 + 10):	20
Total	100

Paper II: Environmental conservation Pollution and Management

Theory :	80
Seminar + Internal test (10 + 10):	20
Total	100

Semester II

The second semester shall consist of one compulsory theory paper and a dissertation as suggested by the concerned supervisor.

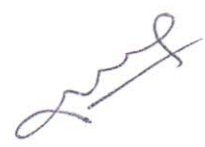
Paper I: General Instrumentation. .

Theory (Compulsory Paper I):	80
Seminar + Internal test (10 + 10):	20
Total	100

Dissertation: Dissertation can be in the form of a Review monograph/ or through presentation of experimental data and analysis Three copies of the dissertation have to be submitted through Head of the Department. Viva-voce will be conducted both by internal and external examiners. There shall be no marks awarded. The award for dissertation will be as either accepted or Rejected

Compulsory Paper I (I semester)	100
Compulsory Paper II (I semester)	100
Compulsory Paper I (II semester)	100
Dissertation (II semester)	

Total **300**



M.Phil : ENVIRONMENTAL SCIENCE-- I SEMESTER

PAPER I: BIOSTATISTICS, COMPUTER AND RESEARCH METHODOLOGY

Unit 1

1. Statistical analysis and applications in biology Mean, Mode, Median.
2. Variability: Standard deviation and Standard error.
3. Correlation techniques.
4. Analysis of Variance (ANOVA), Chi-square test.

Unit 2

1. Use of computers for preparing and presenting documents, statistical packages.
2. Internet use and search of literature,
3. Programmes of MS office.
4. Power point presentation.

Unit 3

1. Basic and applied research.
2. Objective formations.
3. Research design.
4. Literature collection for research.

Unit 4

1. Bibliography, Indexing and literature citation.
2. Publication of papers in Journal, Proceedings, chapters in books.
3. Preparation of Research reports.
4. Publication of research work in online journals.

Unit 5

1. Techniques for photography, diagram and graphic presentation.
2. IPR issues, Terminology of IPR issues.
3. Status of IPR with reference to India
4. Copy right issues.



M.Phil : ENVIRONMENTAL SCIENCE -- I SEMESTER

PAPER II: ENVIRONMENTAL CONSERVATION POLLUTION AND MANAGEMENT

Unit I

1. Natural resources and management
2. Climate change affecting natural resources
3. Indigenous methods of conservation of water
4. Biogeochemical cycles and its consequences

Unit II

1. Environmental pollution; water pollution, air pollution, soil pollution, noise pollution, land pollution
2. Health and air pollution
3. Drinking water disinfection
4. Conventional waste water treatment

Unit III

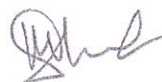
1. EIA and management
2. Basic principles of management
3. Environmental audit
4. Environmental management systems

Unit IV

1. General idea about Environmental engineering
2. Sludge disposal and treatment'
3. Advanced waste water and land treatment system
4. Solid waste management and hazardous waste treatment.

Unit V

1. Environmental tragedies and legislations
2. The Environment (protection and conservation) act 1986.
3. Biodiversity conservation act 2002.
4. Municipal solid waste management rules 2000.



M.Phil : ENVIRONMENTAL SCIENCE II SEMESTER

PAPER I: GENERAL INSTRUMENTATION

Unit I

1. Definition, techniques and scope of Instrumentation
2. Microscopy: principles, types and application of TEM, SEM and fluorescence Microscopy
3. Principles, types and application of Centrifugation

Unit II

1. General principle, application and types of chromatography.
2. HPLC: its role in qualitative and quantitative analysis
3. Electrophoresis principle, application and types; PCR and its application

Unit III

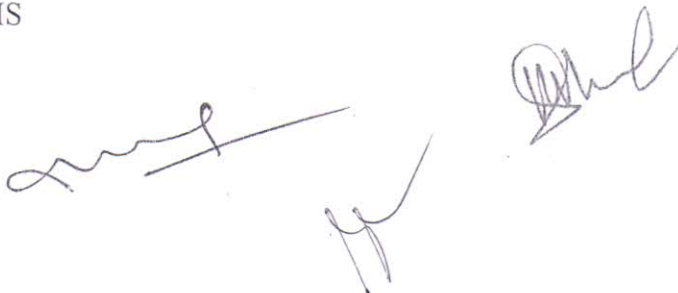
1. Flame Photometry
2. General idea about NMR (Nuclear magnetic resonance spectroscopy)
3. Spectroscopy and its types with reference to Atomic Absorption Spectrophotometer.

Unit IV

1. Air samplers; Handy air sampler and High volume samplers.
2. Water samplers; BOD incubator, Nephelometer, water sampling kit,
3. Conductivity meter and pH meter.

Unit V

1. Remote sensing and its application
2. Introduction to Geographic Information System (GIS)
3. Internet resources for GIS

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