DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

CIRCULAR NO.ACAD/NP/B.Sc.-Ist Yr./SEM.-I & II/173/2013

It is hereby notified for information of all concerned that, on the recommendations of the Board of Studies/Ad-hoc Boards/ Committee under the Faculty of Science, the Hon'ble Vice-Chancellor has accepted the **following revised syllabi for B.Sc. First Year progressively and Syllabus of B.Sc. Textile and Interior Decoration, Semester-V & VI** on behalf of the **Academic Council Under Section-14(7) of the Maharashtra Universities Act, 1994** ***as appended herewith.***

Sr. No.	*Revised Syllabus*	
[1]	*B.Sc. [Instrumentation Practice]*	*Semester- I & II,*
[2]	*B.Sc. [Forensic Science]*	*Semester- I & II,*
[3]	*B.Sc. [Bio-Chemistry]*	*Semester- I & II,*
[4]	*B.Sc. [Networking & Multimedia]*	*Semester- I & II,*
[5]	*B.Sc. [Agro Chemical Fertilizer]*	*Semester- I & II,*
[6]	*B.Sc. [Analytical Chemistry]*	*Semester- I & II,*
[7]	*B.Sc. [Polymer Chemistry]*	*Semester- I & II,*
[8]	*B.Sc. [Environmental Science]*	*Semester- I & II,*
[9]	*B.Sc. [Textile & Interior Decoration]*	*Semester- V & VI,*

This is effective from the **Academic Year 2013-2014** and onwards.

These **syllabi are available on the University Website www.bamu.net**

All concerned are requested to note the contents of this circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
REF.NO.ACAD/NP/B.Sc.-IST YEAR/
Sem-I & II/2013/10191-640
V.C.14[7] A-03.

Date:- 03-06-2013.

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S.K.Kamble
Director,
Board of College and University Development.

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Copy forwarded with compliments to :-

1] **The Principals, affiliated concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University.**

2] The Director, University Network & Information Centre, UNIC, with **a request to upload the above all syllabi on University Website [www.bamu.net].**

Copy to :-

1] The Controller of Examinations,

2] The Superintendent, [B.Sc. Unit],

3] The Superintendent, [Eligibility Unit],

4] The Programmer [Computer Unit-1] Examinations,

5] The Programmer [Computer Unit-2] Examinations,

6] The Director, [E-Suvidha Kendra], in-front of Registrar's Quarter, Dr. Babasaheb Ambedkar Marathwada University,

7] The Public Relation Officer,

8] The Record Keeper, Dr. Babasaheb Ambedkar Marathwada University.

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DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY AURANGABAD

Syllabus

Of

B.Sc. (Environmental Science)
Ist Year

In

Semester Pattern

Effective From

Academic Year 2013-2014
(June 2013 onwards)

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

B.Sc. [ENVIRONMENTAL SCIENCE] in Semester Pattern

Ist Year

Year	Semester	Course Code	Paper Number	Paper Title	Marks
I Year	I	EVS-111	Paper-I	Concepts of Environment	50
		EVS-112	Paper-II	Ecology	50
		EVS-113	Paper-III	Lab Course - I (Practical based on Paper I & Paper II)	50
	II	EVS-121	Paper-IV	Environmental Chemistry and Natural Resources	50
		EVS-122	Paper-V	Environmental Issues and Natural Resources	50
		EVS-123	Paper-VI	Lab Course - II (Practical based on Paper IV & Paper V)	50

B. Sc. I year, Semester I

EVS – 111 (Paper – I): Concepts of Environment

UNIT – I

i) **Introduction:**

Definition of Environment and Environmental science
Environmental Science – Definition, Scope and Importance.
Biosphere:
-Definition, Components of biosphere.

ii) **Evolution of Life:**

Origin of the earth;
evolution of life;
atmosphere of the primitive earth.

Unit — II: Biotic Components of Environment:

Three kingdom of living world-

a) Classicification of Plants
b) Classification of Animals
c) Classification of Protista

ABIOTIC COMPONENTS OF ENVIRONMENT

UNIT – III: Atmosphere:

Definition; structure and composition of atmosphere; evolution of atmosphere; composition of air; atmospheric temperature; atmospheric pressure

UNIT – IV: Lithosphere

Definition, structure of lithosphere, soil composition,
Soil profile; physical and chemical properties of soil,
Soil formation (pedogensis) – physical, chemical and biological weathering.

UNIT - V : Hydrosphere

Definition; structure of water molecule ,
Properties of water,
Distribution of water on earth,
Hydrological cycle.

EVS-112 (Paper-II): Ecology

UNIT- I Introduction:

Ecology- Definition; scope;

Ecosystem- Concept and structure of ecosystem; functions of ecosystem; biotic components of ecosystem(producer, consumer and decomposer); abiotic components of ecosystem.(Wind,Temperature,Soil,Minerals,Nutrients,CO_2,Solar radiation, etc);

Application of ecology in aquaculture

UNIT –II :

Food chain; food web; trophic structure; ecological pyramid; energy in ecosystem; Energy flow in ecosystem; laws of thermodynamics.

UNIT – III : Types of Ecosystems:

Terrestrial ecosystem – dessert ecosystem; grassland ecosystem; forest ecosystem (Evergreen and Deciduous); mountain ecosystem and marsh land.

UNIT – IV: Aquatic ecosystem:

Freshwater ecosystem: i) Lentic ecosystem – Ponds and Lakes;
ii) Lotic ecosystem – Rivers and Streams.

Marine ecosystem: Oceans and Seas, and Estuaries.

UNIT – V: Adaptation

Significance of ecological adaptation;

Ecological adaptation in plants:- Hydrophytes, Xerophytes, Mesophytes , and Halophytes;

Ecological adaptations in animal.

EVS – 113 (Paper – III): Lab Course - I
(Practical Paper based on Paper I & Paper II)
(04 Periods per Practical)

1. To study the laboratory safety rules.
2. To study the cleaning methods of glass wears.
3. To study the First-Aid and emergency treatment in laboratory.
4. Collection and Preservation of phytoplankton and zooplankton samples from different water bodies (river, pond, lake etc.)
5. The qualitative study the phytoplankton's (any 10 specimens).
6. The qualitative study the zooplankton's (any 10 specimens).
7. The quantitative study of zooplanktons – Percentage composition study.
8. Collection of hydrophytes, xerophytes, mesophytic and halophytic plants/animals specimens.
9. Study of xeric adaptation in plants, morphometrically and histologically.
10. study of xeric adaptations in animal (at least 5 specimens morphometrically)
11. To study the aquatic adaptations in plants morphometrically and histologically (at least 5 specimens)
12. Study of mesophytic specimens (at least 5 specimens).

EVS – 122 (Paper – V): Population and Environmental Issues

UNIT – I: Introduction:
Definition of population and population ecology;
Population characteristics – natality, mortality, density, migration, immigration, age distribution, age structure.

UNIT – II: Population growth:
Population growth curves - Sigmoid curve and J –Shape curve;
Population fluctuation - Population oscillation;
World's Population and its relation with development and pollution;
Population explosion; Population explosion in India;
Family planning.

UNIT –III: Community ecology:
Definition and types of community;
Structure and classification; Characteristics of community; Stratification;
Ecotone and edge effect;

UNIT – IV: Ecological Succession:
Definition; types of succession;
Process of succession; Examples of succession – Succession in plants on rocks, and water body; Concept of climax.

Unit –V: Environmental issues:
Definition and concept of:
-Biodiversity conservation,
-Sustainable development,
-Wetland,
-Mangroves,
- Environmental Impact Assessment (EIA),
-SEZ (Special Economic Zone),

- Scheme of labeling of environmental friendly products (Eco-marks) ,
-Wasteland.

EVS – 123 (Paper – VI) : Lab Course - II
(Practical Paper based on Paper IV & Paper V)
(04 Periods per Practical)

1. To study the laboratory equipments and instruments (Oven, Microscope, Incubator, Inoculation chamber, Autoclave, Electronic balance, pH meter, Colorimeter, Turbidity meter, etc).
2. To study the preparation of reagents different Normality and Molarities (i.e. 1 N, 0.1N, 1M, etc).
3 To study species area curve of plant species from terrestrial ecosystem/ college campus.
4. To study the relative density of plant/animals species by quadrate method (by field work or by simulation).
5. To study the relative frequency of plant/animal species by quadrate method (by field work or by simulation).
6. To study the relative abundance of plant/ animal species by quadrate method (by field work or by simulation).
7. To study the total population of species by organism removal method (by simulation methode)
8. To study the Importance Value Index (IVI) of any tree plant species.
9. Study of primary productivity of macrophytes from water reservoir by harvest method.
10 To study the endangered species (at least 06) .
11 To determine the total population of avifauna from unit area of habitat by direct count of their nests and artifacts.
12 Study tour or Field visit report submission is compulsory.

Reference books: for paper EVS – 121 (Paper – IV): Environmental Chemistry and Natural Resources

13 Environmental Chemistry – B.K. Sharma
14 Environmental Chemistry – Kanan Krishnan
15 A Text book of Environmental Chemistry – Dara S. S., S. Chand, Publication.
16 Encyclopedia Environmental Chemistry – A.K. Day
17 Environmental pollution – R.K. Trivedi
18 Environmental Science – Botkin and Kelter, John Wiley and Sons, New York.
19 Environmental Chemistry – M. Satake and Y. Meddow.
20 Environmental Pollution – Katyal and Satake, Anmol Publication, New Delhi.
21 Environmental Chemistry – S. C. Santra, New Central Book Agency, Kolkata.

Reference books: for paper EVS – 122 (Paper – V): Population and Environmental Issues

1. Principles of Ecology – Verma and Agarwal
2. Fundamentals of Ecology – E. P. Odum
3. Basic Ecology – E.P. Odum
4. Environmental Ecology – K. C. Agarwal
5. Science of Ecology – Ehrlic/Roughgarden
6. Population Ecology – C. J. Creb
7. Ecology – Subramanyam
8. Ecology: Principles and Applications – J. L. Chapman and M. J. Reiss
9. Environment and Ecology – Gourkrishna Dasmohapatra
10. Ecology – Ricklefs Miller.
11. Ecology by N. S .Subramanayam and A V SS Sambamurthy.
12. Concepts of Ecology by Edward J Kormondy
13. Introduction to Environmental Science by Y. Anjaneyulu.

Model Question Paper for Theory Paper

Time: **Two hours** Total Marks: **50**

Q.1 : - Long question (on Unit - I) 10

Or

Write short notes on : (on Unit - I)

a) ----

b) ----

Q.2 :- Long question (on Unit - II) ..... .10

Or

Write short notes on : (on Unit - II)

a) ----

b) ----

Q.3:- Long question (on Unit - III) 10

Or

Write short notes on : (on Unit - III)

a) ----

b) ----

Q.4:- Long question (on Unit - IV& V) 10

Or

Write short notes on : (on Unit – IV& V)

a) ----

b) ----

Q.5: Multiple choice questions 10

(on **Unit - I to V** i.e. 02 questions on each unit)

i) ----

ii) ----

iii) -----

iv) -----

v) -----

vi) -----

vii) -----

viii) -----

ix) -----

x) ------

Model Question Paper for Practical Paper III and VI

Time : **6 Hours** Total Marks: **100**

Q. 1: -	Long question (based on paper III)	20
Q. .2:-	Long question (based on paper III)	20
Q. 3:-	Long question (based on paper VI)	20
Q. 4:-	Long question (based on paper VI)	20
Q. 5:	Tour report submission / collection submission	05
Q. 6:	Record book submission (Lab course I & Lab course II) ...	10
Q. 7:	Viva-voce	05

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