

S-01 & 02 June, 2016 AC after Circulars from Circular No.100 & onwards+ - 39 -
DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

CIRCULAR NO. SU/Service Course/30/2016

It is hereby inform to all concerned that, the Choice Based Credit and Grading System have been implemented to the affiliated colleges from the academic year 2015-16 at Post Graduate level for the all Faculties. According to the guidelines of C.B.C. & G.S. it is essential to teach the Service Course to students. The authorities of the university has decided that the service courses run at University Campus and Sub-Center, Osmanabad be apply to the college level. The concerns are inform that to instruct to the students to Choice any one Service Course as per their willingness. Where only one post graduate course they can take the service course of the concerned subject. The syllabi of the service courses are uploaded with the circular on the University website www.bamu.ac.in

The service courses be teach to the students with the **syllabus of IVth-Semester for this year only and hereafter** to tech with the syllabus of III-Semester as per their relevant courses.

This is effective from the academic year 2016-17.

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

University Campus,
Aurangabad-431 004.
REF.NO. SU/SERVICE COURSE /
SYLLA./2016/5117-516
Date:- 02-09-2016.

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Director,
Board of College and
University Development.

Copy forwarded with compliments to:-

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

Copy to :-

- 1] The Controller of Examinations,
 - 6] The Section Officer, [M.A. Unit],
 - 7] The Section Officer, [M.Sc. Unit],
 - 8] The Section Officer, [M.Com. Unit],
 - 9] The Section Officer, [Management Unit],
 - 10] The Section Officer, [Professional Unit],
 - 11] The Section Officer, [Engineering Unit],
 - 3] The Programmer [Computer Unit-1] Examinations,
 - 4] The Programmer [Computer Unit-2] Examinations,
 - 5] The Public Relation Officer,
 - 6] The Co-ordinator, E-Suvidha Kendra, [Rajarshi Shahu Maharaj Pariksha Bhavan,
 - 7] The Record Keeper.
- Dr. Babasaheb Ambedkar Marathwada University,
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**DR. BABASAHEB AMBEDKAR
MARATHWADA UNIVERSITY,
AURANGABAD.**



M.Sc. Biotechnology

Service Course

[Academic Year 2016-17 & onwards]

**Service Course available at the
Department of Biotechnology**

**Environmental Biotechnology
4 Credits**

UNIT –I

Environmental Pollution: An Introduction - Types of pollution, Methods for the measurement of pollution; Global environmental problems: ozone depletion, green house effect and acid rain - Methodology of environmental management – the problem solving approach, its limitations.

Air Pollution and its Control through Biotechnology; Bioremediation of contaminated soils and wastelands.

UNIT – II

Water Pollution and Control:

Need for water management, Measurement and sources of water pollution.-

Biological treatment of industrial effluents -Utilization of aquatic macrophytes, terrestrial plants, fungi, bacteria and cyanobacteria.

Biodegradation of inorganic and organic wastes.

Bioremediation of oil spills.

Microbial remediation of phenolics, metals, sewage nutrients (phosphate and nitrate)-

Bioremediation and bioaugmentation.

Biosorption and bioleaching.

Biotechnological approaches for heavy metal elimination from sewage water and effluents.

UNIT - III

Waste Treatment:

Physico-Chemical properties of water –

Waste water treatment: physical, chemical and biological treatment processes.

Biotechnological approaches for industrial waste water treatment – treatment schemes for waste waters of dairy, distillery, tannery, sugar, and pharmaceutical industries.

Bioreactors for waste water treatment.

UNIT – IV

Solid waste management: -

types of solid wastes - Solid waste characteristics. Its impact on environment.

Solid waste disposal: land filling, incineration, composting, vermiculture and biogas production -

Processing of sugar factory wastes, residential and municipal wastes,

Xenobiotics: Biodegradation of xenobiotics compounds, Organisms and degradative plasmids involved in degradation of xenobiotics: hydrocarbons, substituted hydrocarbons, surfactants, pesticides.

Biotechnological methods for hazardous waste management.

UNIT – V

Conservation Biotechnology: Biodiversity. Definition and types. Uses and values of

Biodiversity- Loss of Biodiversity- Conservation and sustainable management of Biodiversity-

In situ (afforestation, social forestry, agro forestry, botanical Gardens, Zoos, biosphere reserves, national parks sanctuaries, sacred groves and Sthalavrikshas)

Ex situ (Cryopreservation, gene banks, seed banks, pollen banks, sperms banks, DNA banks, Tissue culture and Biotechnological strategies),

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