

Dr. Jayesh  
D. Jayesh  
Notice Board  
14/11/15

# University of Mumbai



REV. 2014  
Date 14/11/2015

**URGENT/BY HAND**  
No. Aff./ICD/15-16/1502  
Mumbai-400 032  
9<sup>th</sup> November, 2015

To,  
Mangaon Taluka Education Society's  
Doshi Vakil Arts &  
Goregaon Co-Operative Urban Bank Science  
& Commerce College  
Goregaon, Dist.-Raigad-402 103

Sub:-Permission to start Certificate Course in (1)Nutrition and Dietetics (2) Conversational English (3) Computer Application (4) Environmental Biochemistry (5) Gandhian Philosophy (6)Marketing and Management (7)Instrumental Analytical Techniques and (8) Marathi Language

Sir,

This has reference to your letter No. 115, 116, 117,118, 119, 120, 121 & 122 /KVM/2015-16 dated 11<sup>th</sup> June, 2015 received in response to this office Circular No. Aff.II/ICC/2015-16/6 dated 12<sup>th</sup> June 2015 to start the above mentioned Courses.

In this connection I am directed to inform you that, you have been permitted to start the above referred Certificate Course in (1)Nutrition and Dietetics (2) Conversational English (3) Computer Application (4) Environmental Biochemistry (5) Gandhian Philosophy (6)Marketing and Management (7)Instrumental Analytical Techniques and (8) Marathi Language from the academic year 2015-16.

The Audit Committee appointed by the University will visit your college in due course and will submit a status report in this behalf to the University.

Yours faithfully,

(Dr. ASHOK H. FARDE)  
DEPUTY REGISTRAR  
Affiliation Section



**PRINCIPAL**  
Mangaon Taluka Education Society's  
Doshi Vakil Arts College and  
G.C.U.B. Science & Commerce College  
Goregaon-Raigad (402103)

# University of Mumbai



No.Aff.H/ ICC/2016-2017/11

## CIRCULAR:-

Attention of the Principals of the affiliated colleges in Arts, Science and Commerce propose to start simultaneous other than Add on Courses (Certificate course/s, Diploma course/s, Advanced Diploma course/s, Advance Diploma course/s) and add-on courses for the students enrolled for B.A / B.Sc / B.Com. leading to the Certificate Course/s, Diploma Course/s, Advance Diploma Course/s under U.G.C. Scheme, is hereby invited and they are informed that

1. The affiliated colleges desiring to introduce the other than Add on Courses (Certificate course/s, Diploma course/s, Advanced Diploma course/s) and add-on courses as Certificate / Diploma / Advanced Diploma for the **FIRST TIME** affiliation will be charged one time affiliation fee.
2. Affiliated Colleges desiring to introduce additional other than Add on courses (Certificate Course/s, Diploma Course/s, Advanced Diploma Course/s) and add-on courses Certificate / Diploma / Advanced Diploma and those permitted earlier will be required to make a **FRESH** application with prescribed fees as one time affiliation fee for the newly sought course/s.
3. The Principal must ensure the conduct of other than Add on Courses (Certificate Course/s, Diploma Course/s, Advanced Diploma Course/s) and add-on course/s as per the guidelines of the University / UGC issued from time to time.
4. The discontinuance of other than Add on Courses (Certificate Course/s, Diploma Course/s, Advanced Diploma Course/s) and add-on courses must be informed by the College to the University well in advance.
5. Any other than Add on Course/s (Certificate course/s, Diploma Course/s, Advanced Diploma course/s) and Certificate Course / Diploma Course / Advanced Diploma Course **discontinued** once by the colleges and if same be desired to re-start again, then they are required to make a **fresh** proposal with the prescribed fees.
6. It is necessary to enclose the copy of approved Syllabus with circular issued by Under -Graduate Section along with the proposal whichever the college desires to introduce other than Add on courses (Certificate Course/s, Diploma Course/s, Advanced Diploma Course/s) and add-on courses Certificate / Diploma / Advanced Diploma course/s under the UGC Scheme.

The affiliation fees for other than Add on Courses (Certificate course/s, Diploma course/s, Advanced Diploma course/s) and Certificate / Diploma / Advanced Diploma Course/s is as under :-

1	Certificate Course	₹ 5,000/-
2	Diploma Course	₹ 7,500/-
3	Advanced Diploma Course	₹ 10,000/-
4	Other than Diploma / Certificate Courses	₹ 10,000/-



Mangon Taluka Education Society's



**Doshi Vakil Arts and G. C. U. B. Science and Commerce College,  
Goregaon-Raigad.**

**Syllabus: Certificate Course in Environmental Biochemistry**

**Eligibility:** Students from F. Y. B. Sc. Onwards

**Duration:** Twelve weeks (30L)

**Objectives: -**

1. To make students understand about the environment, its structure, components and functions.
2. To make learner understand the interactions between living and non living factors of the environment.
3. To make students learn and understand about the environmental pollution, degradation and their causes.
4. To make students understand impact of environmental pollution on ecosystem.
5. To make and student understand various techniques and methods reducing the degradation and preventing pollution.
6. To make learner understand the benefits of organisms in reducing pollution with special emphasis on bioremediation: meaning, types and mechanism.

The course in Environmental Biochemistry consists of three papers; of these two papers are of theory and one is of practical paper as per syllabus given below.

Environmental Biochemistry paper I Environmental Studies

Environmental Biochemistry paper II Environmental Biochemistry

Environmental Biochemistry paper III Practical in Environmental biochemistry

**Paper I- Environmental Studies**

**Unit Topics**

**Lectures 08**

I Ecology and ecosystem

1. Ecology- concept and scope



2. Ecosystem- introduction, structure, functions, components and types
3. Energy flow, ecological pyramids
4. Resources- renewable and non-renewable

## **II Environmental degradation and its impact on**

1. Environmental degradation- meaning, types, causes, impacts, preventive measures, treatment
2. Xenobiotic compounds: sources, effects on ecosystem
3. Biotic factors of ecosystem- special emphasis on threats to human and plant life
4. Abiotic components

## **Paper II- Environmental Biochemistry**

### **Unit Topics**

### **Lectures**

#### **I Introduction to Biochemistry**

05

1. Types of organisms- prokaryotic and eukaryotic
2. Biochemistry- concept and principles, water and its properties
3. Biomolecules- structure and functions of carbohydrates, lipids, nucleic acids and proteins

#### **II Preventions and treatment of Environmental pollution**

05

1. Environmental pollution- preventive measures
2. Treatment of pollutants/ xenobiotics- traditional and bioremediation methods
3. Types of bioremediation: bioremediation, mycoremediation, phytoremediation (in situ and ex situ methods)
4. Mechanism of bioremediation methods with the help of at least one example for each method

## **Paper III- Practical in Environmental biochemistry**

### **Sr. No. Topics**

1. study of water treatment plant
2. Study of soil: pH., alkalinity and acidity, moisture and temperature
3. Water analysis of waste water: pH, C.O.D, Dissolved oxygen
4. Water analysis of waste water: temperature, B. O. D



5. Basic techniques used in water analysis

**References:**

1. Cell Biology, Genetics, Molecular Biology, Evolution and Ecology by P. S. Verma and V. K. Agarwal, 2005; S. Chand and company Ltd.
2. Lehninger Principles of Biochemistry 2009 (5th edition). David L. Nelson & Michael M. Cox, W. H. Freeman publishers.
3. Martin Alexander, Biodegradation and Bioremediation, Second Edition. Academic Press
4. Physico-Chemical Examination of Water, Sewage & Industrial Effluents; Manivasakam N.; PragatiPrakashan; Meerut; 1984.
5. Fundamentals of Ecology; Odum P.E.; Natraj Publishers; Dehradun; 3 Ed" Examination pattern

A candidate has to appear for all three papers of the subject. The student will have to appear for class test and submit assignments. Each theory paper has assigned with 100 marks while 50 marks are given to practical paper. Pattern for conducting examinations will be as follows:

**Question paper pattern: (for theory paper)-**

- |   |    |
|---|----|
|   | 80 |
| 1. M.C.Q./ true or false/ match the following | 20 |
| 2. Short notes (any five)                     | 30 |
| 3. Long answer questions (any five)           | 30 |

**Question paper pattern: (for practical paper)-**

- |  |    |
|--|----|
|  | 20 |
| 1. Perform the water analysis of given water.      |    |
| 2. Perform the soil analysis of given soil sample. |    |
| 4. Viva voce                                       |    |

  
**PRINCIPAL**  
Mangaon Taluka Education Society's  
Doshi Vakil Arts College and  
G.C.U.B. Science & Commerce College  
Goregaon-Raigad (402103)