उपकेंद्र रत्नागिरी
मुंबई विद्यापीठ,
पी-६१, एमआयडीसी, मिरजोळे,
रत्नागिरी - ४१५ ६३९
दूरध्वनी : ०२३५२- २३० ०८८, २३० ०८६
फॅक्स क्रमांक : ०२३५२-२३० ०४४

University of Mumbai
मुंबई विद्यापीठ

SUB-CENTRE, RATNAGIRI
University of Mumbai,
P-61, MIDC, Mirjole,
Rantagiri - 415 639
Tel. No. : 02352-230 088, 230 086
Fax No. : 02352-230 044

Date: 15-05-2015

AC 29-5-15

Item No. 4.33

NOTE

Sindhu Swaddhyay sanstha established by the University of Mumbai in the academic year 2014-15 successfully conducting M.Sc- Zoology (Oceanography Marine science and aquaculture) at Vidyanagri campus Kalina Mumbai. It is time now to expand the activities along coastline of 720 kms to achieve the goals of catering entire coastline in the jusrisdiction of the University. Further it is also necessary to introduce more programmes / courses. It is therefore proposed to introduce following cert course at Ratnagiri Sub-Centre, University of Mumbai.

--Sd--
Vinayak dalvie
Academic Co-Ordinator
Sindhu Swaddhyay Sanstha

--Sd--
Dr.Pandurang Y.Patil
Co-Ordinator
Ratnagiri Sub-Centre

University of Mumbai,
Sindhu Swaddhyay Sanstha
Ratnagiri Sub-Centre, Ratnagiri.
Part time Certificate Course in Physico –chemical Hydrology

1. **Name of the Course: Part time Certificate Course in Physico –chemical Hydrology.**

2. **Vision:** To develop skill force for basic hydrological analysis essential in chemical oceanography, aquaculture, management of aquatic environment and applications in industry and monitoring /governing authorities.

3. **Mission:** To equip students with theoretical knowledge and impart practical training as envisaged in the vision. Thus enabling the students to acquire additional applied skills while pursuing the fulltime programme / occupation.

4. **Objectives of the course :**

It is well felt need that Analysis experts need to develop concern about environment. Therefore,University of Mumbai,Sindhu Swaddhyay Sanshta and Ratnagiri Sub-Centre, Ratnagiri has decided to start this type of interdisciplinary Certificate course. This course is useful for students, working analysts and future analysts. Along with theoretical background more emphasis will be given on skill development through practicals. The objectives of the course are:

a. To develop skill force for basic hydrological analysis essential in chemical oceanography, aquaculture, management of sustainable aquatic environment.
b. To understand environmental issues in general regarding water quality.
c. To understand sampling methods of ground water, pore water and surface water.
d. To understand basic principles involved in water quality and applications in industry.
e. To develop the skill for chemical oceanography, environmental management in the industrial sector.
f. To enabling the students to acquire additional applied skills while pursuing the fulltime program.
g. To improve environmental awareness and remedial measures with respective to water quality and a social aspect.

5. **Eligibility**: H.S.C (Scicence)

6. **Intake capacity** : 20 candidates per batch
7. **Duration:** One Year
   Part time
   Three days a week with session of three hours.

8. Credits: 4 credits

9: Fees: Rs 10,000/- (Ten thousand per student)

Honorarium: 500 Rs per Clock Hour: theory/ Practical (50 % for fulltime faculty of the University)

Centre Incharge: Rs 10,000/- per Month (Additional Charge)

8. **Contents:**

Module I – Introduction to water monitoring

1.1 Introduction to water chemistry
1.2 Physical and chemical properties of water

1.3 Concept of waste water

a) Effluent
b) Influent

1.4 Water quality monitoring

1.5 Selection of sampling location
1.6 Sampling
1.7 Preservation of water samples

Module – II – Physical and Chemical Analysis of Water and Effluents

3.1 Temp,
3.2 Turbidity
3.3 Acidity
3.4 Alkalinity
3.5 Biological oxygen demand (BOD)
3.6 Conductivity and specific conductance
3.7 Chemical oxygen demand (COD)
3.8 Residual Chlorine
3.9 Dissolved oxygen
3.10 Fluoride

3.11 Hardness
3.12 Total nitrogen
3.13 Nitrate
3.14 Nitrite
3.15 Oil and grease
3.16 pH
3.17 Phosphorus
3.18 Total solids (TS)
3.19 Total dissolved solids (TDS)
3.20 Total suspended solids (TSS)
3.21 Sodium
3.22 Potassium

Module -III – Treatability studies of Waste water

8.1 Jar test (Coagulation, Flocculation)
8.2 Mixed liquor suspended solids
8.3 Mixed liquor volatile suspended solids
8.4 Sludge volume index (SVI)
8.5 Volatile fatty acids (VFAs)