

University of Mumbai



No.UG/ 2-I of 2021-22
Mumbai-400 032,
1st June, 2021.

To,
Co-Ordinator,
Sub -Centre, Ratnagiri,
University of Mumbai,
P-61, MIDC, Mirjole
Ratnagiri - 415 639

Sir,

I am to invite your attention to Ordinances, Regulations and Syllabus relating to the Certificate Course in Aquaculture and to inform you that the resolution passed by the Board of Deans at its meeting held on 20th July, 2021 vide item No. 38 have been accepted by the Academic Council at its meeting held on 23rd February, 2021, vide item no. 4.114 and subsequently approved by the Management Council at its meeting held 9th April, 2021 vide item No. 15 and that in accordance therewith, in exercise of the powers conferred upon the Management Council under Section 74(4) of the Maharashtra Public Universities Act, 2016 (Mah. Act No. VI of 2017) the Ordinance 6627 & 6628 Regulations 9370 & 9371 and the syllabus of **Certificate Course in Aquaculture** has been introduced and the same have been brought into force with effect from the academic year **2020-21**, (The said course might be introduced from the academic year 2021-2022 in the wake of prolonged Covid-19 pandemic situation in the country) accordingly, (The same is available on the University's website www.mu.ac.in).

MUMBAI - 400 032
1st June, 2021
To,

(Dr. B.N. Gaikwad)
I/c. REGISTRAR

A.C/4.114/23/02/2021
M.C/15/9/04/2021

No. UG/ 2-I -A of 2021

MUMBAI-400 032

1st June, 2021

Copy forwarded with Compliments for information to:-

- 1) The Chairman, Board of Deans
- 2) The Director, Board of Examinations and Evaluation,
- 3) The Director, Board of Students Development,
- 4) The Co-ordinator, University Computerization Centre,

(Dr. B.N. Gaikwad)
I/c. REGISTRAR

Copy to :-

- 1. The Deputy Registrar, Academic Authorities Meetings and Services (AAMS),**
- 2. The Deputy Registrar, College Affiliations & Development Department (CAD),**
- 3. The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Department (AEM),**
- 4. The Deputy Registrar, Research Administration & Promotion Cell (RAPC),**
- 5. The Deputy Registrar, Executive Authorities Section (EA),**
- 6. The Deputy Registrar, PRO, Fort, (Publication Section),**
- 7. The Deputy Registrar, (Special Cell),**
- 8. The Deputy Registrar, Fort/ Vidyanagari Administration Department (FAD) (VAD), Record Section,**
- 9. The Director, Institute of Distance and Open Learning (IDOL Admin), Vidyanagari,**

They are requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to in the above circular and that on separate Action Taken Report will be sent in this connection.

- 1. P.A to Hon'ble Vice-Chancellor,**
- 2. P.A Pro-Vice-Chancellor,**
- 3. P.A to Registrar,**
- 4. All Deans of all Faculties,**
- 5. P.A to Finance & Account Officers, (F.& A.O),**
- 6. P.A to Director, Board of Examinations and Evaluation,**
- 7. P.A to Director, Innovation, Incubation and Linkages,**
- 8. P.A to Director, Board of Lifelong Learning and Extension (BLLE),**
- 9. The Director, Dept. of Information and Communication Technology (DICT) (CCF & UCC), Vidyanagari,**
- 10. The Director of Board of Student Development,**
- 11. The Director, Department of Students Welfare (DSD),**
- 12. All Deputy Registrar, Examination House,**
- 13. The Deputy Registrars, Finance & Accounts Section,**
- 14. The Assistant Registrar, Administrative sub-Campus Thane,**
- 15. The Assistant Registrar, School of Engg. & Applied Sciences, Kalyan,**
- 16. The Assistant Registrar, Ratnagiri sub-centre, Ratnagiri,**
- 17. The Assistant Registrar, Constituent Colleges Unit,**
- 18. BUCTU,**
- 19. The Receptionist,**
- 20. The Telephone Operator,**
- 21. The Secretary MUASA**

for information.

- Necessity of starting these courses

All above courses are skill-based and add-on courses. These courses will develop a new skill in the students of already existing M.Sc. programmes (Chemistry, Environmental Science, Zoology (Oceanography) thereby making them still competent. The addition of these courses on the bio data of students, will increase the probability of their getting recruited in industries.

- Whether UGC has recommended to start the said courses ?

The University Grants Commission has from time to time, focused the importance of commencement of skill based courses.

- Whether all the courses have commenced from the academic year 2019-20 ?

Because of declaration of lockdown to prevent the spread of Covid-19 since March, 2020, this office was unable to place & subsequently obtain the sanction to the proposal of starting of these courses from the academic year 2019-20.

- The courses started by the University are self-financed. whether adequate number of eligible permanent faculties are available ?

The permanent faculty from this office and nearby aided colleges and experts from industries are available to complete the curriculum of these courses.

- To give details regarding duration of the course and is it possible to compress the course ?

Duration of each course is as below :-

Sr. No.	Course	Duration
1	Diploma in Industrial Safety & Management	1 Year
2	Certificate Course in Aquaculture	6 Months
3	Certificate Course in Aquaponics	6 Months

All courses are of shorter durations.

- The intake capacity of each course and number of admissions given in the current academic year (2019-20)

Intake capacity of each course is as below :-

Sr. No.	Course	Intake Capacity
1	Diploma in Industrial Safety & Management	20
2	Certificate Course in Aquaculture	35
3	Certificate Course in Aquaponics	40

The admission to these courses is yet to be started.

- Opportunities of employability / employment available after undertaking these courses.

The certificate courses have the potential of self-employment. The student having the graduation in science / engineering or diploma in engineering is eligible to take admission to the course of Diploma in Safety & Management. The addition of this Diploma course to the above qualification, will increase the employability of the student.

UNIVERSITY OF MUMBAI



Program:

CERTIFICATE COURSE IN AQUACULTURE

Syllabus

(Certificate Course of 6 months with effect from the
Academic Year 2020-21)

AC: 23/07/2020

Item NO.: 4.114

UNIVERSITY OF MUMBAI



Syllabus for approval

S. No.	Heading	Particulars
1	O. 6627 Title of the course	Certificate Course in Aquaculture
2	O.6628 Eligibility for admission	XII Science passed or Equivalent
3	R – 9370 Passing Marks	40%
4	Ordinances / Regulations (if any)	
5	R- 9371 No. of Years / Semester	Six Months
6	Level	PG/UG / certificate (Strike out which is not applicable)
7	Pattern	Yearly / Semester (Strike out which is not applicable)
8	Status	New / Revised (Strike out which is not applicable)
9	To be implemented from Academic Year	From Academic Year – 2020 -21

Date

Signature

Name of BOS Chairperson / Dean -

University of Mumbai

Draft ordinance, Regulations and Syllabus related to the

CERTIFICATE COURSE IN AQUACULTURE

- Ordinance:** **Title of Course**
'Certificate Course in Aquaculture'
- Ordinance:** **Eligibility**
A candidate for being eligible at admission to the Certificate Course in Aquaculture (DCA) must have passed XII standard examination in Science from Maharashtra State Board of Higher Education or as equivalent thereto.
- Regulation:** **Duration of Course**
The duration of Certificate Course in Aquaculture will be of six months.
- Regulation:** **Intake Capacity:**
35 candidates in one batch
- Teachers:** Post Graduate in Zoology, Fishery Science, Aquaculture.
M-Phil, Ph.D. Sitting and Retired.
Government Qualification Senior Officers and experts from Industries, and as per the norms laid down by the University of Mumbai.
- Regulation:** **Fees**

S. N.	Heads	Amount (Rs.)
1.	Tuition Fee	3500
2.	Registration Fee	200
3.	Admission Processing Fee	100
4.	Examination Fee	700
5.	Laboratory Fee	1500
6.	Mark Sheet	50
7.	Study Material & Updating	600
8.	Library Fee	200
9.	Identity Card	50
10.	Onsite Demonstration Charges	200
11.	Computer / Internet Fee	200
12.	Vice Chancellors Fund	20
13.	Student Welfare	20
14.	University Sports & Cultural Activities	20
15.	Disaster Relief Fund	10
16.	Group Insurance	30
17.	Miscellaneous	100
Total Fees:		7500

Regulation:**Examination**

The examination of the Certificate Course will be held in ONE part - at the end of course.

Regulation:**Standards of Passing of Examination**

To pass this six-month Certificate Course in Aquaculture, the candidate must obtain a minimum of 40% marks overall, in respective paper at the end of term exam.

Less than 40 % - Fail
40 % to 50 % - Pass
51 % to 59 % - Second Class
60 % to 74% - First Class
75 % & above - Distinction

Regulation:**Pedagogy (Instructional System)**

The instructional system for DCA is based on theoretical lectures, Laboratory Practicals and field based visits, Audio – video program, case studies, group work, assignments and presentation. The course envisages active participation approach of the students.

Regulation:**Course Evaluation**

Group work and presentation : 10 %
Field, Visit and Report writing : 10 %
Practical Exam / Viva etc : 30 %
End-term test : 50 %

Regulation:**Course Timing**

Two days in a week (4 hours a day)

The fees for the course are proposed to be Rs. 7500. With the intake capacity of 35 candidates the amount to be collected will be Rs. 262500.00. The recurring expenses are estimated to be Rs. 1,72,500. 00.

The sinking fund for collective expenditure of the center like publicity for the courses, purchase of the instruments, chemicals, glass wares, etc. will be Rs. 90,000.00.

University of Mumbai

Draft Ordinance, Regulations and Syllabus related to the

CERTIFICATE COURSE IN AQUACULTURE

Total Hours: 120 hours

PAPER I: Introduction to Aquaculture

(25 hours)

1. Definition and Principles of Aquaculture.
2. Different aquaculture systems (Fresh / Brackish / Sea water) with subtypes.
3. Cultivable species of freshwater fishes and prawns and their biology.
4. Culture of air breathing fishes, Sewage fed fish culture, sewage treatment.
5. Standard physico-chemical properties of water and soil required for fresh water aquaculture.

Practical Component:

(15 hours)

1. Identification of fishes used for aquaculture (Common Carps-Labeo, Catla, Cirrhina, Common Carp-Cyprinus, Tilapia-Oreochromis, Grass carp-Ctenopharyngodon, Silver carp-Hypophthalmichthys, Macrobrachium, etc.).
2. Identification of air breathing and sewage fed fishes (Channa, Heteropneustes, Clarius, Anabas).
3. Determination of transparency by Secchi disc, pH, Hardness, Dissolved oxygen of water.
4. Determination of pH and grain size of soil.
5. Visit to aquafarm (Fresh water or brackish water or fresh water pearl culture).

PAPER II: Brackish (Estuarine) water fish culture and commercially important marine varieties of fish/ prawns/mollusc/sea weeds.

(25 hours)

1. Brackish water fin fish culture – species of Chanos, Mugil, Lates, etc.).
2. Molluscan culture – species of edible oysters, mussels and clams cultured.
3. Culture of various food materials required for different growth stages of fish.
4. Important species of marine pearl oysters for culture and method of artificial pearl production.
5. Culture of seaweeds, common cultivated species.

Practical Component:**(15 hours)**

1. Identification of brackish water fishes (Chanos, Mugil, Lates, Hilsa).
2. Identification of oysters, mussels and clams (Crassostrea, Perna, Meritrix, Katelysia, Gafrarium, Paphia, Anadara, etc.).
3. To prepare and maintain a culture of paramecium, daphnia, moina, artemia, etc.
4. Identification of pearl oyster and sea weeds (Pinctada, Gelidiella, Gracilaria, Sargassum, Tubinaria).
5. Visit to fish landing center, fish market, processing industry, etc.

PAPER III: Fresh water aquarium fishes and its management.**(25 hours)**

1. Introduction to aquarium, ornamental fishes and aquarium accessories.
2. Design and construction of fresh water aquaria on commercial scale.
3. Setting up and maintenance of an aquarium.
4. Commercial production of goldfish, live bearers, gouramis, barbs and tetras, angel fish.
5. Introduction to aquatic plants used in aquarium.

Practical Component:**(15 hours)**

1. Identification of ornamental fishes (Angel, Gourami, Neon Tetra, Siamese fighter, Danio, Guppy, Molly, etc.).
2. Identification to aquarium accessories like aerator, bubblers, feeding cup, food dispenser, filters-bottom, column and surface.
3. Identification with reference to breeding habits – i) Eggs layers - Gold fish, Angel. ii) Live bearers - Guppy, Molly, Sword tail. Iii) Nestling fish - Gourami, Siamese fighter, etc.).
4. Identification of aquatic plants (Cabomba, Ceratophyllum, Hydrilla, Ludwigia, Vallisneria, etc.).
5. Visit to Aquarium shop OR Aquarium fish breeding center.

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