

A COURSE GUIDE FOR Aquatic Biotechnology	COURSE TITLE: Aquatic Biotechnology
MODULE NAME : Environmental Biotechnology	COURSE CODE : Biot4141
MODULE CODE : Biot-M4141	COURSE ECTS : 3
MODULE NUMBER: 14	COURSE WEIGHT : 0.21
MODULE CATEGORY :core	PREPARED BY: Adem Mohammed (Asist.Prof.)
MODULE ECTS: 14	Instructor's Contact Information: Office Building =
YEAR : IV	E-mail: ade2010moha@gmail.com Phone:
SEMESTER : II	Office Hours
TARGET GROUPS : FOURTH YEAR BIOTECHNOLOGY STUDENTS	Course Logistics Location: Classroom

Course Content

day	Contents
1	1. Introduction to Aquatic biotechnology
2	2. Molecular Genetics of Aquatic organisms 2.1 Discovery & cloning of novel genes 2.2 Genetic manipulations of finfish & shellfish
3	3. Medical Applications of aquatic biotechnology 3.1 Drugs & medicines from the sea

	3.2 Monitoring health & human disease;
4	4. Environmental applications of Aquatic biotechnology 4.1 Antifouling Agents 4.2 Biosensors
5	5. Environmental remediation 5.1 Marine biotechnology
6	6. Fish & marine invertebrate 6.1 transgenic fish technology & its application in fish production
7	7. The uses of macro & micro algae
8	8. Fish aquaculture techniques and its application in food production

Course Description

The course deals with Introduction to Aquatic biotechnology; Molecular Genetics of Aquatic organisms: Discovery & cloning of novel genes, Genetic manipulations of finfish & shellfish; Medical Applications of aquatic biotechnology: Drugs & medicines from the sea, health & human disease; Environmental applications of Aquatic biotechnology: Antifouling Agents, Biosensors, Environmental remediation; Marine biotechnology: Fish & marine invertebrate, transgenic fish technology & its application in fish production; The uses of macro & micro algae.

Course Objectives

At the end of the course, students will be able to:

At the end of this course, the students will be able to:

- identify the basic forms of life that live in aquatic environment
- apply aquatic biotechnology and in agricultural, environmental protection, medicine
- apply aquaculture technology in food production

Course Assignments

- ☐ Field visit report of aquacultures

Assessment Arrangements

Test 1 will be given, which weights out of 10%,

Test 2 will be given, which weights out of 15%

Assignment 1 will be given, which weights out of 10%

Assignment 2 will be given, which weights out of 10%

Attendance will be taken randomly, which weights out of 5%, and

The remaining 50 % will be for final exam.

References

1. Marine Board (2010). Marine Biotechnology: A New Vision and Strategy for Europe. Marine Board-ESF Position Paper 15
2. **ESF Marine Board (2001)**. Marine Biotechnology: A European Strategy for Marine Biotechnology.
3. Cole, G.A. (1983). Textbook of Limnology. (3rd ed.) The C.V.Mosby Company, St. Louis
4. FAO (2018). The State of World Fisheries and Aquaculture 2018 - Meeting the sustainable development goals. Rome. Licence: CC BY-NC-SA 3.0 IGO. Page 2 of 8
5. Robert Arthur (MRAG), Chris Béné (IDS), William Leschen and David Little (2013). Fisheries and aquaculture and their potential roles in development: an assessment of the current evidence.

Approval section

Course Instructor

Adem Mohammed

Name

Date

Signature

Program Coordinator

Name

Date

Signature

Department head

Tadesse Abate

Name

Date

Signature