

COLLEGE OF FISHERIES, KISHANGANJ
BIHAR ANIMAL SCIENCES UNIVERSITY, PATNA

Lecture plan
FBT 508 (1+1)-Marine biotechnology

Theory

Sl. No.	Topics	No. of Classes
1	Marine bioresources: Introduction, historical background and scope of marine biotechnology	1
2	Present status and major areas of marine biotechnology; commercially important and potential marine species	1
3	Microalgae and macroalgae: diversity, culture methods and applications in aquaculture	1
4	Bioprospecting: concepts, objectives and methods for exploring marine environments	1
5	Gene and allele mining for novel compounds; marine bioresources and secondary metabolites	1
6	Marine-derived pharmaceuticals and bioactive compounds	1
7	Marine proteins and lipids; bioactive metabolites from marine microorganisms	1
8	Bioactive compounds from soft corals, hard corals and marine sponges	1
9	Marine biotoxins: major types, biological activities and pharmacological potential	1
10	Marine enzymes: overview and biotechnological applications	1
11	Amylases, proteases and lipases from marine organisms	1
12	Cellulases and chitinases from microalgae, bacteria, fungi and actinomycetes	1
13	Marine polysaccharides: alginic acid and agar	1
14	Fucoidan and carrageenan from marine seaweeds: properties and applications	1
15	Environmental biotechnology: biofilms and biofuels from marine resources	1
16	Bioremediation and phytoremediation in marine and coastal environments	1
17	Genetically engineered microbes for marine pollution control	1
18	Biofouling: mechanisms, impacts, control and prevention	1
19	Antifouling properties of marine organisms, including algae, seagrass and marine microbes	1
20	Metagenomics: concepts, approaches and applications in marine biotechnology	1
Total		20

Practical

Sl. No.	Topics	No. of Classes
1	Identification of microalgae	1
2	Isolation and culture of microalgae	1
3	Identification of seaweeds	1
4	Micropropagation of seaweeds	1
5	Isolation and culture of microalgae	1
6	Extraction of bioactive compounds from seaweeds	1
7	Ethanol extract preparation from microalgae or seaweed	1
Total		07

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