

SYLLABUS

for

Value-added Course

Bioprospecting from Cyanobacteria and Algae

(BOTVACA 001)

(w.e.f. 2022-2023)



Offered by:

Department of Botany

Panskura Banamali College

(AUTONOMOUS)



Panskura R.S., Purba Medinipur

West Bengal – 721152

COURSE INFORMATION IN BRIEF

Course Name:	<u>Bioprospecting from Cyanobacteria and Algae</u>
Course Contents:	Bioprospecting for Value added products from Algae, <i>Spirullina</i> Culturing techniques; Startup planing
Course Type:	Value-added Course (Optional, additional, and not a part of the CBCS curriculum)
Medium:	Bengali, English
Mode:	Offline
Intake:	Minimum 15; Maximum 40
Eligibility:	+XII, Any interested candidate
Duration:	30 hours (to complete within a time span of 2 months)
Course Fees:	Rs. 300
Coordinator:	Dr. Manojit Debnath, Assistant Professor
Contact:	Department of Botany, Panskura Banamali College (Autonomous) mdebnath.pbc@gmail.com 8697418775 (WhatsApp only)

Structure & Contents

●Objective: Skill development for start-up activities

●Outcome: To become a skilled person through algal value added product and employment generation for self and society

Course Instructor: Dr. Manojit Debnath

Theory (12 hrs)

Unit 1. Introduction about algae, History of Algal Culturing Techniques (2)

Unit 2. Culture Media and Sterilization Freshwater Culture Media, Marine Culture Media, Composition, Media preparation (2)

Unit 3: *Spirulina* & Microalgal Culturing Techniques : Sample collection, Isolation, Purification; Culturing Microalgae in Laboratory and Outdoor system, Use of Photobioreactor for microalgae culture (3)

Unit4: Maintenance of Microalgal Culture in laboratory and outdoor system (2)

Unit 5: Microalgal culture as business tool: Scaling up and harvesting techniques; Pilot Project setup; Business planning layout, Startup fund generation (3)

Practical content (18 hr)

1. Field visit for sample collection from biotopes of West Bengal
2. Culture media preparation
3. Isolation, Subculturing and Purification process in laboratory
4. *Spirulina*/ Microalgal growth rate and strain selection for Scale up in outdoor system
5. Submission of project/Lab report

Suggested reading:

- a. Algal Culturing Techniques Edited by Robert A. Andersen
- b. Handbook of Microalgal Mass Culture (1986): Edited By Amos Richmond