MANGALORE UNIVERSITY

DEPARTMENT OF MICROBIOLOGY
M.Sc. MICROBIOLOGY

MBH-404: Phycology

56h

OBJECTIVES

1. To understand general properties of algae.
2. To learn identification of algae from different habitats.
3. To study significances of algae in various field such as bio-fuel food and medicines.
4. To study importance of algae in environmental pollution monitoring water purification plant soil fertility and other commercial bi-product.

COURSE OUTCOME

CO1: Large scale cultivation of algae for pigment production and extraction.
CO2: Self-employment in setting up small scale industries of bio-fertilizers and singe cell proteins etc.
CO3: Development of algal based food and fodder
CO4: Knowledge on economic importance of various types of algae

Unit I

General characters and classification of algae, distribution and classification, morphology & ultrastructure of cyanophycean cell. Photosynthetic pigments. Difference between microalgae and macroalgae. Difference between prokaryotic- blue green algae and eukaryotic algae- green, red, brown. Significance of figments (structure of chlorophyll a, b, c, and c2, xanthophyll, carotenoids and other figments)

Unit II

Ecology of fresh water, marine water and soil algae, measurement of algal growth. Cultivation and Reproduction in algae, Economics importance of algae, uses of algae as SCP, *Spirulina* &*Chlorella*, Algal biofuel. Bio diesel, bio ethanol, mass culturing of algae. Extraction and refinement. Symbiotic algae, lichens, coral reefs and sea sponges.

Unit III

Algae as indicators of pollution, algae as biofertilizers, eutrophication, algal blooms, algal toxins, algae as raw food and feed. Industrially important algal products. Algae with special references to soil fertility, commercial products, food and medicine.

Unit IV

Role of algae in heavy metal removal, immobilized and labelled algae, strain section and large scale cultivation. Role of algae in water purification.

Note: Each unit is for 14h