



GOVERNMENT OF TAMIL NADU

HIGHER SECONDARY SECOND YEAR

BOTANY

A publication under Free Textbook Programme of Government of Tamil Nadu

Department of School Education

Untouchability is Inhuman and a Crime

Government of Tamil Nadu

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HOW TO USE THE BOOK

Career corner

List of professions related to the subject



Learning Objectives:

Learning objectives are brief statements that describe what students will be expected to learn by the end of school year, course, unit, lesson or class period.



Chapter Outline

Illustrate the complete overview of chapter



Amazing facts, Rhetorical questions to lead students to biological inquiry

Activity

Directions are provided to students to conduct activities in order to explore, enrich the concept.

Infographics

Visual representation of the lesson to enrich learning .

Evaluation

Assess students to pause, think and check their understanding



To motivate the students to further explore the content digitally and take them in to virtual world



ICT

To enhance digital Science skills among students

Concept Map

Conceptual diagram that depicts relationships between concepts to enable students to learn the content schematically

Glossary

Explanation of scientific terms

English - Tamil Terminology

Tamil terminology for Botanical terms given for easy understanding

References

List of related books for further details of the topic

Web links

List of digital resources

Competitive Exam questions

Model questions to face various competitive exams

Scope of Botany

Higher Studies and Career Opportunities

List of Medical Courses

1 M. B. B. S. (Bachelor of Medicine and Bachelor of Surgery) – 5.5 years

MBBS is the bachelor degree in medical field for cure & diagnose, awarded in many countries.

2 B. D. S. (Bachelor of Dental Surgery) – 4 years

BDS is a professional degree programme in dentistry.

3 B. H. M. S. (Bachelor of Homeopathic Medicine & Surgery) – 5.5 years

BHMS is a bachelor degree in Homeopathic Education in India regulated by the National Institute of Homeopathy.

4 B. A. M. S. (Bachelor of Ayurvedic Medicine and Surgery) – 5.5 years

BAMS is a bachelor degree in ayurvedic system of medical field. In India, the Ayurvedic Education is regulated by the Central Council of Indian Medicine (CCIM).

5 B.Pharm (Bachelor of Pharmacy) – 4 years

This degree involves the knowledge of pharmacy.

6 B.Sc Nursing – 4 years

The motive of B.Sc. Nursing programme is to produce the qualified nurses, as a member of the health care team.

7 B.P.T (Physiotherapy) – 4.5 years

Physiotherapy helps the temporary disabled people in their rehabilitation.

8 B.O.T (Occupational Therapy) – 3 years

The Occupational Therapy helps the people to enable in their everyday life and treats the emotionally and physically challenged people.

9 B.U.M.S (Unani Medicine) – 5.5 years

BUMS degree is equivalent to the BAMS, but in Unani medicines.

Naturopathy & Yogic Science is one of the trusted fields after Allopathy in India.

Duration: 4 Years

10 D.Pharm (Ayurvedic, Siddha Medicine) – 2 years

It is a medical diploma course in pharmacy of ayurvedic medicines.

11 BMLT (Bachelor of Medical Lab Technicians) – 3 year

It is a bachelor degree of medical laboratory technology, contains the entire laboratory practices of the medical system. Various institutions are offering the B.Sc. programme in medical laboratory technology in India.

12 DMLT (Diploma of Medical Lab Technicians) – 1 year

It is a medical diploma course of medical laboratory technology, contains the laboratory practices of the medical field. Candidate must have cleared the 10+2 exam with PCB.

Agricultural Courses

- ✦ B.Sc in Agriculture
- ✦ B.Sc in Genetics and Plant Breeding
- ✦ B.Sc in Agriculture Economics and Farm Management
- ✦ B.Sc in Animal Husbandry
- ✦ B.Sc in Fisheries
- ✦ B.Sc in Forestry
- ✦ B.Sc Soil and Water Management
- ✦ B.Sc in Horticulture
- ✦ B.Sc Agriculture and Food Business
- ✦ M.Sc in Agronomy
- ✦ M.Sc Agricultural Economics
- ✦ M.Sc Seed science and Technology
- ✦ M.Sc Agricultural Entomology
- ✦ M.Sc Agricultural Statistics
- ✦ Diploma in Agriculture

Various Botany courses

- ❖ Bachelor of Science in Botany
- ❖ Bachelor of Science (Hons) in Botany
- ❖ Master of Science in Botany
- ❖ Master of Science in Botany and Forestry
- ❖ Master of Science in Applied Botany
- ❖ Master of Science in Herbal Science
- ❖ Post Graduate Diploma in Medico botany
- ❖ Post Graduate Diploma in Plant Biodiversity

Specializations available for botany are:

- | | |
|--------------------|--------------------|
| ❖ Cytology | ❖ Genetics |
| ❖ Lichenology | ❖ Economic botany |
| ❖ Palynology | ❖ Palaeobotany |
| ❖ Bryology | ❖ Ethnobotany |
| ❖ Phycology | ❖ Phytochemistry |
| ❖ Forestry | ❖ Plant morphology |
| ❖ Phytopathology | ❖ Plant anatomy |
| ❖ Plant physiology | ❖ Plant genetics |
| ❖ Agronomy | ❖ Horticulture |
| ❖ Plant ecology | ❖ Plant systematic |

Veterinary Science

Bachelor of Veterinary Science or B.V.Sc. is an undergraduate program in veterinary

Botany Career Opportunities and Job Prospects

The amount of diversity in the field of Botany gives it students to choose their specializations as per their choice, aptitude and interests. One can be a part of any reputed organization as a

Plant explorer: Botanist with a passion for plants who could be a photographer, writer, expeditioner, etc

Conservationist: Is an individual who works for the conservation of the environment and is often linked to organisations working for the cause.

Ecologist: A person who works for the ecosystem and a balanced environment.

Environment consultant: Some botanists qualify to work as environmental consultants, providing inputs and advice for the conservation of the environment.

Horticulturist: A horticulturist knows the science behind different plants, flowers, and greenery. They conduct research in gardening and landscaping, plant propagation, crop production, plant breeding, genetic engineering, plant biochemistry, and plant physiology.

Plant biochemist: Biochemists study the chemical and physical principles of living things and of biological processes, such as cell development, growth, heredity, and disease.

Molecular biologist: Molecular biologists conduct research and academic activities. The research component involves the study of biological structures in well-equipped laboratories with advanced technology to help them explore complex molecular structures and their particular functions. The equipment

may include microscopes, lab centrifuges, computers with specific software that allows them to analyze obtained data, and many more.

The knowledge of plant sciences is essential for development and management of forests, parks, waste lands, sea wealth etc.

Few of the industries which one can work with are:

- ❖ Chemical Industry
- ❖ Food Companies
- ❖ Arboretum
- ❖ Forest Services
- ❖ Biotechnology Firms
- ❖ Oil Industry
- ❖ Land Management Agencies
- ❖ Seed And Nursery Companies
- ❖ Plant Health Inspection Services
- ❖ Biological Supply Houses
- ❖ Plant Resources Laboratory
- ❖ Educational Institutions
- ❖ National Park Service
- ❖ Departments of Conservation and Land Management
- ❖ Public Health Service
- ❖ Department of Agriculture
- ❖ Forest Service
- ❖ Departments of Environmental Protection
- ❖ Departments of Agriculture and Water
- ❖ Nature Conservancy
- ❖ Environmental Protection Agency
- ❖ Medical Plant Resources Laboratory
- ❖ Several foreign countries provide platforms for Msc in Botany graduates to build up a good career in the field of Botany. Several undertakings functioning abroad demand the service of Msc in Botany graduates.

Research Institutes involved in Plant Science

a. Affiliated to Ministry of Environment and Forests

- ❖ Centre for Environment Education, Ahmedabad
- ❖ Forest Survey of India, Dehra Dun
- ❖ Indian Institute of Forest Management, Bhopal
- ❖ Institute of Forest Genetics and Tree Breeding, Jorhat

b. Affiliated to Indian Council of Agricultural Research

- ❖ Central Agricultural Research Institute, Port Blair
- ❖ Central Research Institute for Jute and Allied fibres, Barrackpore
- ❖ Directorate of Oilseeds Research, Hyderabad
- ❖ Indian Grassland and Fodder Research Institute, Jhansi
- ❖ Jute Technological Research Laboratories, Calcutta
- ❖ National Centre for Mushroom Research and Training, Solan

c. Affiliated to Council of Scientific and Industrial Research

- ❖ Central Drug Research Institute, Lucknow
- ❖ Central Food Technological Research Institute, Mysore
- ❖ National Environment Engineering Research Institute, Nagpur

d. Affiliated to Indian Council of Medical Research

- ❖ Central Council for Research in Unani Medicine, Delhi
- ❖ Central Council for Research in Ayurveda and Siddha, Delhi

e. Research Academics

- ❖ Indian Academy of Science, Bangalore
- ❖ Indian Botanical Society, Delhi
- ❖ Indian Mycological Society, Delhi
- ❖ Indian National Science Academy, Delhi
- ❖ Indian Society for Plantation Crops, Kasargod.

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E-book



Assessment

