



UNIVERSITY OF NORTH BENGAL

PROPOSED COURSE STRUCTURE

**FOUR YEAR UNDERGRADUATE
PROGRAM (FYUGP)**

SEMESTER-III

Skill Enhancement Course

MUSHROOM CULTURE TECHNOLOGY

**UNDER THE
NEW CURRICULUM AND
CREDIT FRAMEWORK, 2022**

W.E.F. 2024–2025

SEMESTER - III

Course Type: Skill Enhancement Course

Course Code: POOCSEC341

Course Name: Mushroom Culture Technology

Credits: 3 (Theory-2, Practical-1)

Full Marks: 60 (Theory-40, Practical-20)

Brief Course Description:

This course will cover the fundamentals of mushroom cultivation for creating income and employment opportunities. Also, the cultivation practices of different important mushrooms will be covered. The course will instill practical skills in mushroom production, harvesting, and marketing for commercial purposes. This course's primary goal is to encourage self-employment.

Prerequisite(s) and/or Note(s):

- (1) High School Biology.
- (2) Note(s): Syllabus may be modified after and not during the term itself, depending on the circumstances. However, students will be evaluated only on the basis of topics covered in the course.

Course Objectives:

Knowledge acquired:

- (1) Importance of mushrooms in nutrition and health.
- (2) Knowledge of different mushrooms cultivated in India.
- (3) Commercial importance of mushroom cultivation.

Skills gained:

- (1) Setting up a mushroom cultivation unit.
- (2) Techniques of spawn production.
- (3) Mushroom cultivation, harvesting, packaging, and marketing of mushrooms for employment generation.

Competency Developed:

- (1) Students will acquire technical knowledge about the cultivation and production of important mushrooms.
- (2) Students will learn to set up a mushroom cultivation unit for generating self employment.

THEORY

Credits: 2

Total lectures: 30

Unit 1: Introduction

(6 lectures)

History of mushroom cultivation in India; biology of mushrooms; nutritional value, medicinal value; poisonous mushrooms and edible mushroom. Marketing of mushroom in India and across the world. Present scenario and prospects for Mushroom cultivation.

Unit 2: Cultivation technology

(10 lectures)

Infrastructure, equipment and substrates in mushroom cultivation - Polythene bags, vessels, inoculation hook, inoculation loop, sieves culture racks, Mushroom unit or mushroom house, water sprayer, tray, boilers, driers, pure culture; sterilization method; Spawn- Types and preparation of spawn, mushroom bed preparation and factors affecting mushroom and materials for compost preparation; Casing, raw material used for casing, preparation of casing material; important sanitation during various stages of mushroom cultivation.

Unit 3: Cultivation of important mushroom

(6 lectures)

General process for the cultivation of *Agaricus bisporus*, *Pleurotus sajor-caju* and *Volvariella volvacea*.

Unit 4: Harvesting of mushroom

(8 lectures)

Identification of the right stage of mushroom harvesting; Methods of harvesting, packaging, storing and grading of mushroom and post-harvest procedures; Preparation of value-added products of mushroom. Disease control and pest management of mushrooms.

PRACTICAL

Credits: 1

Total classes: 30

1. Study of biology of mushroom: Workout, drawing and labelling of external and internal parts of a typical mushroom (*Agaricus* sp.).
2. Preparation of PDA culture media.
3. Demonstration of spawn production.
4. Familiarization with different instruments used in mushroom production and its principle using live material/photographs.
5. Visit to a local mushroom cultivation unit.

Suggested Readings

1. Marimuthu, T. Krishnamoorthy, A.S. Sivaprakasam, K. and Jayarajan. R (1991) Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.
2. Swaminathan, M. (1990) Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.
3. Tewari, Pankaj Kapoor, S.C., (1988). Mushroom cultivation, Mittal Publications, Delhi.
4. Nita Bahl (1984-1988) Handbook of Mushrooms, II Edition, Vol. I & Vol. II.

QUESTION PATTERN & TOTAL MARKS DISTRIBUTION FOR SEC PAPER

Theoretical Paper (Full Marks = 40)

Sl No.	Questions to be answered	Out of	Marks for each Question	Total Marks
1.	5	8	1	$5 \times 1 = 5$
2.	3	5	5	$3 \times 5 = 15$
3.	2	4	10	$2 \times 10 = 20$

PRACTICAL QUESTION PATTERN & EXAMINATION GUIDELINES

Practical Paper (Full Marks = 20)

❖ Layout of marks for practical examination:

a)	Experiment/ Demonstration	6 Marks
b)	Submission of Field Report/ Assignment	10 Marks
c)	Laboratory notebook	2 Marks
d)	Viva Voce	2 Marks
	Total	20 Marks

❖ Questions are to be set following the practical syllabus.

1. **For experiment/demonstration** – to be set from serial no. 1, 2, 3, 4. (alternate questions may be set).
2. **For submission of field report/ assignment** – the report should be prepared on the basis of field visit as per serial no. 5 with proper photographs and documentation.
Note: In case the field visit cannot be conducted, only in such cases, the students should be instructed to conduct a field visit themselves as per serial no. 5 and submit the assignment based on the same.
3. **For laboratory notebook** – the signed laboratory class notebook is to be submitted at the time of the exam.
4. **For viva-voce** – to be asked from the whole syllabus with special emphasis on the practical syllabus.

DURATION OF EXAMINATION FOR SEC PAPERS

Semester End Examination	Full Marks	Duration of Exams
Theoretical	40	2 Hours
Practical	20	3 Hours