

**REPORT OF THE CERTIFICATE
COURSE TITLED**

***ADD-ON COURSE: MUSHROOM
CULTIVATION***

**CONDUCTED BY HOOGHLY WOMEN'S
COLLEGE**

***REPORT OF THE CERTIFICATE COURSE TITLED ADD-ON COURSE:
MUSHROOM CULTIVATION***

CONDUCTED BY HOOGHLY WOMEN'S COLLEGE

Objectives of the course: Mushroom cultivation course aims to provide detailed training on mushroom cultivation, packaging and marketing. It also enables learners to provide a business plan on mushroom cultivation to become self-reliant and independent.

Mode of Teaching: Offline

Total duration of the course: 6 months

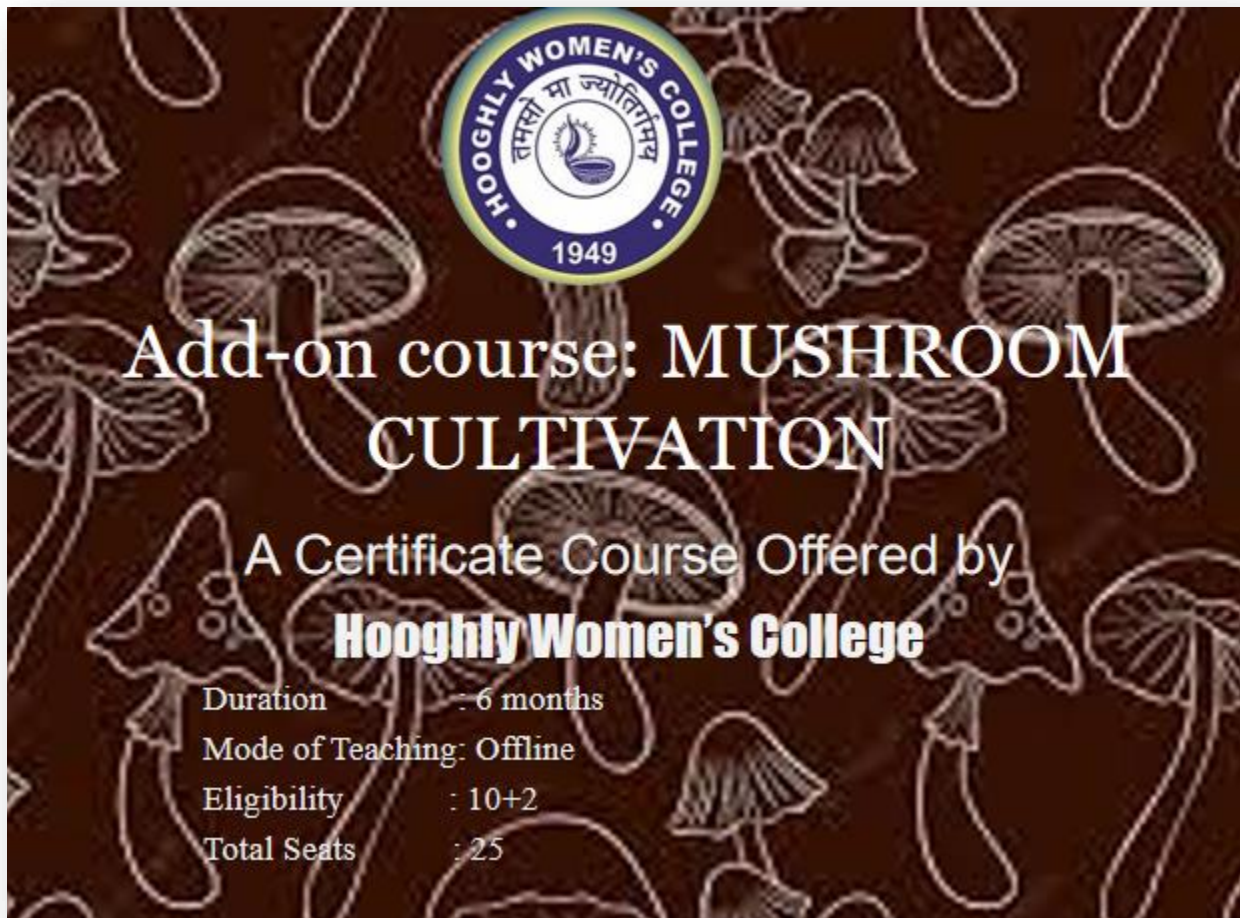
Fee: ₹ 1000

Contact Person: Debashis Santra

Course Coordinator: Prof. Satyajit Biswas

Course Structure: Theory and Practical classes

FLYER OF THE COURSE



Add-on course: MUSHROOM CULTIVATION


A Certificate Course Offered by
Hooghly Women's College

Duration	: 6 months
Mode of Teaching:	Offline
Eligibility	: 10+2
Total Seats	: 25

The course was inaugurated on 1st April 2023. Twenty two students registered for the course

NOTICE

Hooghly Women's College is organizing a certificate course titled 'Mushroom cultivation' for students to enhance their career opportunities. The course will commence from 1st April, 2023. Students are requested to register for the course on or before 20th March, 2023. The course fee will be Rs 1000 for six months.


Course Coordinator 10th/23

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10/03/23
Principal

Principa.
Hooghly Women's College.

SYLLABUS

A six month certificate course on Mushroom cultivation and value added products

PAPER I: MUSHROOM CULTIVATION AND ECONOMIC IMPORTANCE

Unit: I

Mushroom morphology

Different parts of a typical mushroom & variations in mushroom morphology. Key to differentiate edible from poisonous mushrooms.

Unit: II

Mushroom Classification

Based on occurrence- Epigenous & Hypogenous, Natural Habitats- Humicolous, Lignicolous & Coprophilous, Color of spores- white, yellow pink, purple brown & black, Morphology- fruiting layers exposed to air, fruiting layers not exposed to air, plants with predominantly pitted cap, cap saddled shape & saucer shape, Structure and texture of fruit bodies-gilled fungal & pore fungal, Fruit bodies and spores- Ainsworth et al (1973) classification. Recent Classification-.8th edition of Ainsworth & Bisby's 'Dictionary of Fungi'.

Unit: III

Biology of Mushrooms

Types of edible mushroom and their identifications. Button, Straw & Oyster- General morphology, distinguishing characteristics, spore germination and life cycle.

Unit: IV

Nutrient Profile of Mushroom

Protein, amino acids, calorific values, carbohydrates, fats, vitamins & minerals.

Unit: V

Health benefits of Mushroom

Antiviral value, antibacterial effect, antifungal effect, anti-tumor effect, hematological value cardiovascular & renal effect, in therapeutic diets, adolescence, for aged persons & diabetes mellitus.

Unit: VI

Disease control and pest management

Study of different diseases of different mushrooms, Major insect pests- Mushroom flies/ nematodes/mites.

Identification and management of pests by chemical and non-chemical methods.

Unit: VII

Value addition of mushroom

Value added recipes preparation, value added products such as mushrooms pickle, jam, sauce, candy, preserve, chips etc. Fresh and dried mushroom powder value added products like bakery products, papad, nuggets etc.

PAPER II: CULTIVATION TECHNIQUES

Unit: I

Cultivation System & Farm design

Fundamentals of cultivation system- small village unit & larger commercial unit. Principles of mushroom farm layout- location of building plot, design of farm. bulk chamber, composting platform. Equipment & pasteurization room & growing rooms.

Unit: II

Compost & Composting: Facilities

Principles of composting, machinery required for compost making, materials for compost preparation. Methods of Composting- Long method of composting (LMC) & Short method of composting (SMC).

Unit: III

Spawn & Spawning

Facilities required for spawn preparation, Preparation of spawn substrate, preparation of pure culture, media used in raising pure culture, culture maintenance, and storage of spawn.

Unit: IV

Casing materials & Case running

Importance of casing mixture, Quality parameters of casing soil, different types of casing mixtures, commonly used materials.

Unit: V

Cultivation of Button, Oyster, Milky mushroom and Straw Mushrooms

Collection of raw materials, compost & composting, spawn & spawning, casing & case run, cropping & crop management, picking & packing.

Unit: VI

Cultivation of other economically important and medicinal mushroom

Cultivation of Shiitake Mushroom, Kabul Dhingri (King oyster) Mushroom, Reishi (Ganoderma) Mushroom, Kira ghas (Cordyceps) Mushroom etc.

Unit: VII

Harvesting packaging & grading and storage of Mushroom

Harvesting of mushroom

Grading of mushroom

Flow Sheet for the harvesting and packaging of White button mushroom, washing, Precooling and Packing

Storage

- Short term storage, Long term storage, Preservation in Steeping Solution, Post-Harvest Handling of different mushroom. Drying of Mushroom

PRACTICAL - Mushroom cultivation and value added products

1. Principals and functioning of instruments used in mushroom cultivation.
2. Different sterilization technique and sanitation methods.
3. Hands on sterilization techniques and preparation of mother culture media.
4. Inoculation, incubation and spawn production.
5. Preparation of different recipe for value added products.
6. Hands on training for different cultivation process of mushroom. Harvesting packaging & grading and storage of mushroom.
7. Visit to relevant Labs/Field.

Reference Books:

- Mushroom Production and Processing Technology, Pathak Yadav Gour {2010}. Published by Agrobios, India.
- A Hand Book of Edible Mushrooms, S.Kannaiyan & K.Ramasamy {1980}. Today & Tomorrow Printers and Publishers, New Delhi.
- Handbook on Mushrooms (Vol1 and Vol 2), Nita Bahl, Oxford and IBH Publishing Company.
- Mushroom Cultivation, Tripathi D.P. {2005}, Oxford and IBH Publishing Company.
- Marimuthu, T. Krishnamoorthy, A.S. Sivaprakasam, K. and Jayarajan. R (1991) Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.
- Swaminathan, M. (1990) Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No. 88, Mysore Road, Bangalore 560018.
- Tewari, Pankaj Kapoor, S.C., (1988). Mushroom cultivation, Mittal Publications, Delhi.

COURSE REQUIREMENTS

1. Students from any discipline are eligible for this course.
2. Requirements for the course-
 - a. Near about 200 sq. ft. room with shade or false ceiling (can be made through shade net 95%).
 - b. Raw material as a paddy straw, wood husk / saw dust etc.
 - c. Spawn of different mushrooms.

- d. Polypropylene Filter Patch Bag (pp bags) with rubber band.
 - e. Plastic drum (50 lt.)
 - f. Racks (preferably iron / aluminum make)
 - g. Hand sprayer
 - h. Mixer grinder and utensils
 - i. Gas and oven
3. Sterilization technique
- a. Chemicals like formaldehyde, calcium hydroxide etc.
 - b. Physical method - steam (steam jacket)
4. Programme included both Theory & Practical classes)
5. The syllabus will include both theory, practical and hands on training programmed.
6. Class conducted by the trainers and institutional teachers.
7. Certificate issued only to candidates who will regularly allow the course work and fulfill all the academic requirements.

HOOGLY WOMEN'S COLLEGE

List of Students of Mashroom Cultivation

Sl	Roll	Name	Semester	Subject
1	200340600006	Ankana Samaddar ✓	5	MCBH
2	200340600015	Deepika Hazra ✓	5	MCBH
3	200340600019	Ishani Das ✓	5	MCBH
4	200340600020	Kamalika Manna ✓	5	MCBH
5	210340600009	Ankita Das ✓	3	NUTH
6	210340600018	Farhin Dewan ✓	3	MCBH
7	210340600019	Farhin Sultana ✓	3	MCBH
8	210340600026	Meghna Mukherjee ✓	3	NUTH
9	210340600035	Riktha Karmakar ✓	3	MCBH
10	210340600059	Tithi Malik ✓	3	MCBH
11	210340600065	Vasudha Singh ✓	3	NUTH
12	220340600001	Ananya Badyopadhyay ✓	1	MCBH
13	220340600006	Anushka Banerjee ✓	1	MCBH
14	220340600012	Debolina kumdu ✓	1	MCBH
15	220340600017	Jayassri Paul ✓	1	MCBH
16	220340600021	Monideepa Badyppadhyay ✓	1	MCBH
17	220340600045	Shreya Saha ✓	4	NUTH
18	College Roll 210	Amrita Das	4	BIOS
19		Rikta Paul	2	MCBH
20.	20201045294	Shain Sabnam	2	MCBH
21.	202201045277	Muskan Singh	2	MCBH
22.	202101052380	Aiswarya Munnur	4	NUTH



THEORY AND PRACTICAL CLASSES

COURSE OUTCOME

All the students successfully completed the course. Certificates were distributed to the students.



