Government Degree College Baramulla

SEMESTER – 1st **Skill Enhancement Course**

Subject: BOTANY

Title: Commercial Mushroom Cultivation – I: Introduction to Mushroom Science

Course code: BBO22S102

Credits (2+2): Theory: 2, Practical: 2 **Contact hours: 32 (T) + 32 (L)**

Part 1: Theory = (2 CREDITS)

Objectives: *To impart knowledge to students about the diversity, identification and cultivation of mushrooms growing in the region and to acquaint them about the nutritional and medicinal value of mushrooms*

Learning Outcomes: *After thoroughly understanding the course the student should be able to:*

- *Learn the basic skills how mushrooms can be cultivated on waste organic matter using well sophisticated techniques inside the laboratories.*
- *Understand how mushroom cultivation could turn a student into independent entrepreneur.*
- *Understand how mushroom can add the nutrient value of our diet and to understand their medicinal value as well.*

UNIT I

Overview of mushroom, characteristics and Classification types, description of different types of mushroom, present status.

Mushroom ecology: Habitat, nutrition, life cycle of button and oyster mushrooms, conservation and diversity; nutritional and medicinal importance of mushrooms, ethno-medicinal Importance of mushrooms.

(16 Contact hours)

UNIT II

Mushroom cultivation: (science and art, waste to wealth), round the year mushroom cultivation, life cycle, reproduction of mushrooms

Mushroom hunting, pre requisite, collection, description, and description of mushrooms

Poisonous mushroom, mushroom poisoning, symptoms of mushroom poisoning, precautions to avoid mushroom poisoning.

(16 Contact hours)

Books recommended:

1. Ahlawat, O. P., And R. P. Tewari. Cultivation Technology Of Paddy Straw Mushroom (Volvariella Volvacea). Vol. 36. India: National Research Centre For Mushroom, 2007.
2. Alexopoulos, C.J. And Mims, C.W. 2002. Introductory Mycology. 5th Edition. John Wiley And Sons,New York.
3. Alexopoulos, C.J., Mims, C.W., Blackwell, M. (1996). Introductory Mycology, John Wiley And Sons (Asia), Singapore. 4th Edition.
4. Chang, Shu-Ting, And William Alfred Hayes, Eds. The Biology And Cultivation Of Edible Mushrooms. Academic Press, 2013.
5. Singh, Manjit, Et Al. "Mushrooms: Cultivation, Marketing And Consumption." Mushrooms: Cultivation, Marketing And Consumption. (2011).

Part 2: Laboratory Course (2 Credits)

(32 Contact hours)

Course objectives

- *The students should understand the economic importance of mushrooms*
- *To aware students about in vitro culturing of mushrooms*

Course Outcomes

On completion of course, the student should be able to

- *Generate the revenue and to become self-independent*
- *To understand the importance of mushrooms in our daily life*

Practical's (2 Credits)

- Acquaintance with the laboratory equipment's.
- Culture media preparation and sterilization techniques, Isolation of pure cultures.
- Mushroom collection from their natural habitat, isolation and preservation.
- Spore print development.
- Identification and preservations of mushroom specimen.
- Identification of poisonous mushrooms.

Books recommended:

1. Beetz, Alice E., and Lane Greer. Mushroom cultivation and marketing. ATTRA, 2004.
2. Kapoor, J. N. "Mushroom cultivation." *Mushroom cultivation.* (1989).
3. MES, MODULAR EMPLOYABLE SKILLS. "Mushroom cultivation." (2003).

4. Stamets, Paul. Growing gourmet and medicinal mushrooms. Ten speed press, 2011.
5. Suman, Balam Chand, and V. P. Sharma. Mushroom cultivation in India. Daya Books, 2007.