

Name of the Programme: M. Sc (Botany)

Course Code: BOT-626

Title of the Course: Lab in Mushroom Biotechnology

Number of Credits: 1 (30 hours)

Effective from AY: 2022-23

<u>Prerequisites for the course:</u>	Basic knowledge of biology. Students should opt for BOT-604 .	
<u>Objectives:</u>	To impart training in the production, quality evaluation, and marketing of edible mushrooms and their nutritional importance.	
<u>Content:</u>	1. Identification of mushroom habitats. 2. Identification of edible, medicinal, and toxic mushroom species. 3. Preparation of culture, preparation of mother spawn, and multiplication. 4. Obtaining and studying mushroom spore prints. 5. Developmental biology of local wild mushrooms. 6. Preparation of pure mushroom cultures. 7. Production of S.C.P.s (single cell proteins) from submerged culture of edible mushrooms. 8. Production and evaluation of mushroom spawn. 9. Processing and preservation of mushrooms, economics of spawn, and mushroom production. 10. Oyster mushroom cultivation using tissue paper rolls and any other substrate. 11. Mushroom quality evaluation- button or oyster mushrooms. 12. Visit to a mushroom industry and submission of report.	2 hours 2 hours 4 hours 2 hours 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 2 hours
<u>Pedagogy:</u>	Practical Exercises, Hands-on training, Videos, Moodle-based guidance.	
<u>References/ Readings:</u>	Arora, D. (1986). Mushrooms demystified: A comprehensive guide to the fleshy fungi. Berkeley: Ten Speed Press. 959 pp. Kuo, M. (2007). 100 Edible Mushrooms. Ann Arbor: University of Michigan Press. 329 pp. Kuo, M. and A. Methven (2010). 100 Cool Mushrooms. Ann Arbor: University of Michigan Press. 210 pp. Kumar, A., and Satpathy, A. (2022). Cultivation of Two Edible Mushrooms and Need for Training of Mushroom Production Technology to Enhance Rural Economy. In: Biology, Cultivation and Applications of Mushrooms (pp. 561-577). Springer, Singapore. Largent, D. L. (1973). How to identify mushrooms to genus I: Macroscopic features. Eureka, CA: Mad River Press. 86 pp. Largent, D. L. and Thiers, H. D. (1973). How to identify mushrooms to genus II: Field identification of genera. Eureka, CA: Mad River Press. 32 pp.	
<u>Learning Outcomes:</u>	1. Will enable the cultivation of edible mushrooms and produce quality mushroom spawn. 2. Prospects to work in a mushroom industry.	

	3. Will enable the preparation of consultancy reports on mushroom production and marketing. 4. Will enable to work as a master trainer in mushroom cultivation camps or workshops.	
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