

**UNIVERSITY OF MADRAS**  
**B.Sc. DEGREE PROGRAMME IN PLANT BIOLOGY**  
**AND PLANT BIOTECHNOLOGY**  
**SYLLABUS WITH EFFECT FROM 2023-2024**

Title of the Course		MUSHROOM CULTIVATION					
Paper Number		Skill Enhancement Course II (Non-Major Elective-II)					
Category	Elective	Year	I	Credits	2	Course Code	139S2A
		Semester	II				
Instructional Hours per week		Lecture	Tutorial	Lab Practice	Total		
		2	-	-	2		
Pre-requisite		Basic knowledge on structure and function of various groups of mushrooms.					
<b>Course Objectives</b>							
C1	To learn and develop skills in mushroom cultivation.						
C2	To understand and appreciate the role of mushrooms in Nutrition, Medicine and health.						
C3	To cultivate mushroom cultivation in small scale industry.						
C4	To learn about diseases and post harvest technology.						
C5	To study new methods and strategies to contribute to mushroom production.						
<b>Course outcomes:</b>						<b>Programme Outcomes</b>	
CO On completion of this course, the students will be able to:							
1. Recall various types and categories of mushroom.						K1	
2. Explain about various types of food technologies associated with mushroom industry.						K2	
3. Apply techniques studied for cultivation of various types of mushroom.						K3	
4. Analyze and decipher the environmental factors and economic value associated with mushroom cultivation						K4	
5. Develop new methods and strategies to contribute to mushroom production.						K5 & K6	
<b>UNIT</b>	<b>CONTENTS</b>						
<b>I</b>	Introduction: Morphology, Types of Mushroom, identification of edible and poisonous mushroom Nutritive values and Health benefits of mushrooms.						
<b>II</b>	Mushroom cultivation, prospects and scope of Mushroom cultivation in small scale Industry.						
<b>III</b>	General characters and Life cycle of <i>Pleurotus spp</i> and <i>Agaricus spp</i> .						
<b>IV</b>	Spawn production, growth media, spawn running and harvesting of mushrooms and marketing.						
<b>V</b>	Diseases and post harvest technology, Insect pests, nematodes, mites, viruses, fungal competitors and other important diseases.						
Extended Professional Component (is a part of internal component only, Not to be included in the External Examination question paper)				Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC – CSIR / GATE / TNPSC /others to be solved (To be discussed during the Tutorial hour)			

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Skills acquired from this course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill
<b>Recommended Texts</b>	<ol style="list-style-type: none"> <li>1. Handbook of Mushroom Cultivation. 1999. TNAU publication.</li> <li>2. Marimuthu, T., Krishnamoorthy, A.S., Sivaprakasam, K. and Jayarajan. R. 1991. Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.</li> <li>3. Swaminathan, M. 1990. Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.</li> <li>4. Sing. 2005. Modern Mushroom Cultivation, International Book Distributors, Dehradun.</li> <li>5. Verma, 2013. Mushroom: edible and medicinal: cultivation conservation, strainimprovement with their marketing. Daya Publishing House.</li> </ol>
<b>Reference Books</b>	<ol style="list-style-type: none"> <li>1. Handbook of Mushroom Cultivation. 1999. TNAU publication.</li> <li>2. Marimuthu, T., Krishnamoorthy, A.S., Sivaprakasam, K. and Jayarajan. R. 1991. Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.</li> <li>3. Swaminathan, M. 1990. Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.</li> <li>4. Nita Bahl. 2002. Handbook on Mushroom 4<sup>th</sup> edition Vijayprimlani for oxford &amp; IBH publishing co., Pvt., Ltd., New Delhi. Dr.C. Sebastian Rajesekaran Reader in Botany Bishop Heber College, Trichy – 17.</li> <li>5. Suman. 2005. Mushroom Cultivation Processing and Uses, M/s. IBD Publishers and Distributors, New Delhi.</li> </ol>
<b>Web Resources</b>	<ol style="list-style-type: none"> <li>1. <a href="https://www.amazon.in/Mushroom-Cultivation-India-B-C/dp/817035479X">https://www.amazon.in/Mushroom-Cultivation-India-B-C/dp/817035479X</a></li> <li>2. <a href="http://nrcmushroom.org/book-cultivation-merged.pdf">http://nrcmushroom.org/book-cultivation-merged.pdf</a></li> <li>3. <a href="http://agricoop.nic.in/sites/default/files/ICAR_8.pdf">http://agricoop.nic.in/sites/default/files/ICAR_8.pdf</a></li> <li>4. <a href="http://www.agrimoon.com/mushroom-culture-horticulture-icar-pdf-book/">http://www.agrimoon.com/mushroom-culture-horticulture-icar-pdf-book/</a></li> <li>5. <a href="https://books.google.co.in/books/about/Mushroom_Cultivation_in_India.html?id=6AJx99OGTKEC&amp;redir_esc=y">https://books.google.co.in/books/about/Mushroom_Cultivation_in_India.html?id=6AJx99OGTKEC&amp;redir_esc=y</a></li> </ol>

**Mapping with Programme Outcomes:**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S			S	M	L	M	M
CO 2	S			M		S	M	S
CO 3	M			S		M		S
CO 4	S	S	S	S		M		S
CO 5	S	S	M				S	S

S-Strong (3)

M-Medium (2)

L-Low(1)