# HAJEE KARUTHA ROWTHER HOWDIA COLLEGE

(An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai.) Re-Accredited with A++ Grade by NAAC (3<sup>rd</sup> Cycle) Uthamapalayam - 625 533.



## **DEPARTMENT OF BOTANY**

**PART IV - BOTANY** 

**SYLLABUS** 

**Choice Based Credit System – CBCS** 

(As per TANSCHE)

With

**Outcome Based Education (OBE)** 

(Academic Year 2023 - 2026)

### Semester – I

Course Category	Course Code	Course Title	Hrs	CIAE	TEE	Max Marks	Credits
Part – IV	23UBYSE11	Nursery and Landscaping (NME)	2	25	75	100	2

## Semester – II

Course Category	Course Code	Course Title	Hrs	CIAE	TEE	Max Marks	Credits
Part – IV	23UBYSE21	Mushroom Cultivation (NME )	2	25	75	100	2

			S	S		Mark	S
Course Code	Course Title	Category	Credits	Hours	CIAE	TEE	Total
23UBYSE11	NURSERY AND LANDSCAPING (NME)	NME	2	2	25	75	100

	Learning Objectives						
L1	To recognize the importance of growing plants and practice the	ne knowledg	ge gained				
	by developing kitchen garden and ornamental garden.						
L2	To be able to design gardens and become entrepreneur in Horticulture.						
L3	To study the methods of propagation.						
L4	To know about nursery structure.						
L5	To learn about gardening.						
UNIT	Contents		No. of Hours				
Ι	Introduction, prospects and scope of nursery and landscaping		6				
II	Methods of Propagation – cutting, layering, grafting, Floriculture – Rose, Chrysanthemum, Jasmine – cultivation.	budding,	6				
III	Gardening – formal garden, informal garden, vegetable landscaped layout designing – formation and maintenance of	lawn.	6				
IV	Nursery structures – Green house – Shade house, Mist chamber – Topiary, Bonsai culture.						
V	Manures, composting – vermicomposting.						
	Total						
	Course Outcomes	Knowled	ge Level				
CO	On completion of this course, students will						
1	Recognize the basic principles and components of gardening.	K1,K2,K3,K4					
2	Explain about bio-aesthetic planning and conceptualize flower arrangement.	K1,K2,K3,	K4,K5,K6				
3	Apply techniques for design various types of gardens according to the culture and art of bonsai.	K1,K2,K3,	K4,K5,K6				
4	Compare and contrast different garden styles and landscaping patterns.	K1,K2,K3,	K4,K5,K6				
5	Establish and maintain special types of gardens for outdoor and indoor landscaping.	K1,K2,K3	3,K4,K5				
	Textbooks						
1	Amarnath V. 2006. Nursery and Landscaping, M/s IBD Publish						
2	Butts, E and Stensson, K. 2012. Sheridan Nurseries: One hundr People, Plans, and Plants. Dundurn Group Ltd.	ed years of					
3	Russell, T. 2012. Nature Guide: Trees: The world in your ha Mukherjee D. Gardening in India, Oxford IBH publishing co, Ne	-	Guides).				
4	Kumar, N. 1997. Introduction to Horticulture, Rajalakshmi Pub		agercoil.				
5	Butts, E. and Stensson, K. 2012.Sheridan Nurseries: One hundr People,Plans, and Plants. Dundurn Group Ltd						
1	Reference Books						

1.	Edmond Musser and Andres, Fundamentals of Horticulture, McGraw Hill Book Co. New Delhi.
2.	Agrawal, P.K. 1993. Hand Book of Seed Technology, Dept. of Agriculture and Cooperation, National Seed Corporation Ltd., New Delhi.
3.	Janick Jules. 1979. Horticultural Science. (3 <sup>rd</sup> Ed.), W.H. Freeman and Co.,San Francisco, USA.
4.	Singh, J. 2018. Fundamentals of Horticulture. Kalyani Publishers.
5.	Sharma V. K. 1999. Encyclopaedia of Practical Horticulture, Vol I –IV, Deep And
э.	Deep Publ. Pvt. Ltd.
	Web Resources
	https://www.kopykitab.com/higher-education-ebooks/higher-education-
1.	ebooks/Agricultural-Industry-agriculture-eBooks/Nursery-And-Landscaping-by-
	V-Amarnath
2.	https://www.amazon.in/Nursery-Landscaping-Veena-
۷.	Amarnath/dp/8177542788
3.	https://www.amazon.in/Gardening/b?ie=UTF8&node=1637077031
4.	https://in.pinterest.com/pin/496733033900458021/?lp=true

## Mapping with Programme Outcomes:

CO /PO	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	1	3	2
CO 2	3	3	2	2	3
CO 3	2	2	3	1	1
CO 4	3	2	2	1	3
CO 5	3	3	2	3	2

Strong-3 Medium-2 Low-1

### Level of Correlation between PSO's and CO's

CO /PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	2	2	1	3
CO2	3	2	2	2	2
CO3	1	1	3	3	1
CO4	2	1	3	2	1
CO5	1	2	3	2	3
Strong 2 Modium 2	Low 1	•	•		-

Strong-3 Medium-2 Low-1

			ts	S	Marks		
Course Code	Course Title	Category	Credit	Hour	CIAE	TEE	Total
23UBYSE21	MUSHROOM CULTIVATION (NME)	NME	2	2	25	75	100

	Learning Objectives					
L1	To learn and develop skills in mushroom cultivation					
L2	To understand and appreciate the role of mushrooms in Nut health.	rition, Me	edicine and			
L3	To cultivate mushroom cultivation in small scale industry.					
L4	To learn about diseases and post harvest technology.					
L5	To study new methods and strategies to contribute to mushre	oom prod	uction.			
UNIT	Contents		No. of Hours			
Ι	<b>Introduction:</b> Morphology, Types of Mushroom, identific edible and poisonous mushroom, Nutritive values, life common edible mushrooms.		6			
II	Mushroom cultivation, prospects and scope of Mushroom cultivation, prospects and scope of Mushroom cultivation.	ltivation	6			
III	Life cycle of <i>Pleurotusspp</i> and <i>Agaricus spp</i> .		6			
IV	Spawn production, growth media, spawn running and harvesting of mushrooms and marketing.					
V	Diseases and post harvest technology, Insect pests, nematodes, mites, viruses, fungal competitors and other important diseases.					
	Total		30			
	Course Outcomes	Knowle	edge Level			
CO	On completion of this course, students will					
1	Recall various types and categories of mushroom.	K1,K	2,K3,K4			
2	Explain about various types of food technologies associated with mushroom industry.	K1,K2,K	3,K4,K5,K6			
3	Apply techniques studied for cultivation of various types of mushroom.	K1,K2,K	3,K4,K5,K6			
4	Analyze and decipher the environmental factors and economic value associated with mushroom cultivation	K1,K2,K	3,K4,K5,K6			
5	Develop new methods and strategies to contribute to mushroom production.	K1,K2,	K3,K4,K5			
	Textbooks					
1	Handbook of Mushroom Cultivation. 1999. TNAU publication					
2	Marimuthu, T., Krishnamoorthy, A.S., Sivaprakasam, K. and Ja 1991.Oyster Mushrooms, Department of Plant Pathology, Tar AgriculturalUniversity, Coimbatore	mil Nadu				
3	Swaminathan, M. 1990. Food and Nutrition. Bappco, The andPublishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560		re Printing			
4	Sing. 2005. Modern Mushroom Cultivation, International Boo Dehradun.		utors,			

5	Verma, 2013. Mushroom: edible and medicinal: cultivation									
5	conservation, strainimprovementwith their marketing.DayaPublishingHouse.									
	Reference Books									
1.	Handbook of Mushroom Cultivation. 1999. TNAU publication									
	Marimuthu, T., Krishnamoorthy, A.S., Sivaprakasam, K. and Jayarajan. R.									
2.	1991.Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu									
	Agricultural University, Coimbatore.									
3.	Swaminathan, M. 1990. Food and Nutrition. Bappco, The Bangalore Printing									
з.	andPublishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.									
	Nita Bahl. 2002. Handbook on Mushroom 4 <sup>th</sup> edition Vijayprimlani for oxford &									
4.	IBH publishing co., Pvt., Ltd., New Delhi. Dr.C. Sebastian Rajesekaran Reader in									
	Botany Bishop Heber College, Trichy – 17.									
5.	Suman. 2005. Mushroom Cultivation Processing and Uses, M/s. IBD Publishers									
э.	and Distributors, New Delhi.									
	Web Resources									
1.	https://www.amazon.in/Mushroom-Cultivation-India-B-C/dp/817035479X									
2.	http://nrcmushroom.org/book-cultivation-merged.pdf									
3.	http://agricoop.nic.in/sites/default/files/ICAR_8.pdf									
4.	http://www.agrimoon.com/mushroom-culture-horticulture-icar-pdf-book/									
r.	https://books.google.co.in/books/about/Mushroom_Cultivation_in_India.html?									
5.	id=6AJx990GTKEC&redir_esc=y									

## Mapping with Programme Outcomes:

CO /PO	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	3	3	2
CO 2	3	2	3	2	3
CO 3	2	3	2	3	3
CO 4	3	3	3	3	2
CO 5	3	3	2	3	2
Strong-3 Medium-2	Low-1				

#### Level of Correlation between PSO's and CO's

CO /PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	2	2	1	3
CO2	3	2	2	2	2
CO3	1	1	3	3	1
CO4	2	1	3	2	1
C05	1	2	3	2	3
Cturner 2 Madium 2		•			-

Strong-3 Medium-2 Low-1