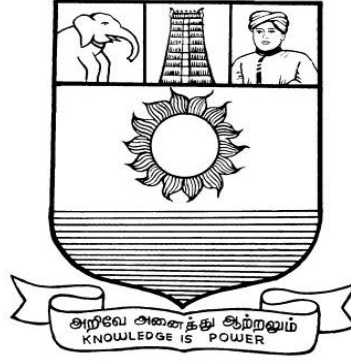


மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்
திருநெல்வேலி – 627 012

Manonmaniam Sundaranar University
Thirunelveli – 627 012.



கல்விசார் நிலைக்குழுக் கூட்டம்

**MEETING OF THE STANDING COMMITTEE ON
ACADEMIC AFFAIRS HELD ON 09.02.2017**

**Syllabus for Diploma in Mushroom Technology Course offered
through Directorate of Vocational Education
(Community Colleges and Extension Learning Programme)
from 2017 - 2018**

DIPLOMA IN MUSHROOM TECHNOLOGY
SCHEME OF EXAMINATION

Subject code	Title of the Paper	Credit	Hours	Passing Minimum
Semester I				
C17MT11/E17MT01	Introduction to Mushroom	6	90	40/100
C17MT12/E17MT02	Mushroom Types and its Nutrient Profile	6	90	40/100
C17MT13/E17MT03	Techniques in Mushroom cultivation	6	90	40/100
C17CE10/E17CE10	Communicative English	6	90	40/100
C17MTP1/E17MTP1	Practical I- Covering first 3 papers	6	90	40/100
Semester II				
C17MT21/E17MT04	Advanced Mycology	6	90	40/100
C17MT22/E17MT05	Diseases and Problems in Mushroom Cultivation	6	90	40/100
C17LS23/E17LS05	Life skill	6	90	40/100
C17MT24/E17MT06	Entrepreneurship development in Mushroom cultivation	6	90	40/100
C17MTP2/C17MTP2	Practical II - Covering first 3 papers	6	90	40/100

Eligibility for admission: Pass in 12thstd examination conducted by the Govt. of Tamil Nadu Board of Secondary Education, Government of Tamil Nadu or any other equivalent examination.

Examination: Passing Minimum for each paper is 40%. Classification will be done on the basis of percentage marks of the total marks obtained in all the papers and as given below:

- 40 % but less than 50 % - Third class
50 % but less than 60 % - Second class
60 % and above - First class

Syllabus

First Semester:-

- Paper I - Introduction to Mushroom
Paper II - Mushroom Types and its Nutrient Profile
Paper III - Techniques in Mushroom cultivation
Paper IV - Communicative English
Paper V - Practical 1- Covering first 3 papers

Second Semester:-

- Paper VI - Advanced Mycology
Paper VII - Diseases and Problems in Mushroom Cultivation
Paper VIII - Life Skill
Paper IX - Entrepreneurship development in Mushroom cultivation
Paper X - Practical II- Covering first 3 papers

***(Semester Pattern for Community College Only)**

Semester-I

(C17MT11/E17MT01)Paper I: Introduction to Mushroom

Unit I: History and classification of Indian Mushrooms: Edible and Poisonous Mushroom.

Unit II: Mushroom Classification: Based on occurrence, Morphology. Classification: edibility and poisonous properties, nuclear behaviour and ultra structural changes during the development of the mushroom fungi.

Unit III: 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.

Unit IV: Morphological and Microscopical identification of mushrooms.

Unit V: Nutrient Profile of Mushroom: Protein, aminoacids, calorific values, carbohydrates, fats, vitamins & minerals.

References

1. Kannaiyan, S. Ramasamy, K. (1980). A hand book of edible mushroom, Today & Tomorrows Printers & Publishers, New Delhi.
2. Pandey B P 1996. A textbook of fungi. Chand and Company N Delhi.

(C17MT12/E17MT02)Paper II: Mushroom Types and its Nutrient Profile

Unit I: Life cycle of Mushroom: General Morphology, Characteristics, spore germination, life cycle; Pleurotus sp., Agaricus sp.

Unit II: Nutrient Profile of Mushroom: Protein, aminoacids, calorific values, carbohydrates , fats, vitamins & minerals.

Unit III: Nature, Medicinal and nutritional value, Health benefits: Microbicidal effects. Therapeutic Aspects: Antitumour effect.

Unit IV: Identification of Mushroom compounds: Antimicrobial, Flavonoids, Pharmaceutical compounds. Separation and Purification of Compounds.

Unit V: Economic importance of fungi- Pharmaceutical application and in industries.

References

1. Pandey, B. P. 1996. A textbook of fungi.Chand and Company New Delhi.
2. Pathak, V. N. and Yadav, N. (1998). Mushroom Production and Processing Technology. Agrobios, Jodhpur.

(C17MT13/E17MT03)Paper III: Techniques in Mushroom Cultivation

Unit I: Structure and construction of Mushroom House- Layout of traditional and green house method. Methods of Mushroom cultivation: Bed Method, Polythene Bag Method.

Unit II: Breeding conditions of mushroom strains: temperate conditions, Isolation of spawn, growth media.

Unit III: 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 IV: Cultivation of Oyster, Paddy and Button mushroom-Preparation of Pure Culture and spawn cultivation methods and harvesting.

Unit V: Post harvest technology: Storage-Freezing, dry Freezing, drying, canning, quality assurance and entrepreneurship.

References

1. Mushroom Cultivation, Tripathi, D.P.(2005) Oxford & IBH Publishing Co. PVT.LTD, New Delhi.
2. Mushroom Production and Processing Technology, PathakYadavGour (2010) Published by Agrobios (India).
3. Harander Singh 1991. Mushrooms-The art of cultivation- Sterling Publishers.

(C17CE10/E17CE10)Communicative English

Unit I: Learning context

Concept of learning – Learning style –Grammatical framework – sentence framing – paragraph and texts

Unit II: Reading

Basic concept – Purposes of reading-Decoding-Reading materials – Barriers of reading

Unit III: Writing

Basic concept-Writing style-Terminology-stages-English spelling and punctuation – Written texts

Unit IV: Speaking

Language functions-Conversation- Features of spoken English – Types of English course: functional English, English literature, advance English – Phonetic

Unit V: Developing Communication Skills

Meaning –Classroom presence- Features of developing learning process- Practical skills and Listening- uses of communicative English

References

1. Raman, m.&S. Sharma (2011) communication skills, OUP,New Delhi: India
2. Lata, P.&S. Kumar(2011) communication skills, OUP,New Delhi: India,
- 3.Leech,G&J.Svartvik(2002) A communicative grammar of English, Pearson,India,
4. Sethi, J. and P.V. Dharmija (2007) A course in Phonetics and spoken English. Second edition, Prentice hall: New Delhi

(C17MTP1/E17MTP1)Paper V: Practical - I: Development of Mushroom substrate and spawn

1. Morphological and Microscopic Identification of edible and poisonous mushrooms.
2. Equipment and sterilization techniques for culture media.
3. Maintenance of mushroom beds of oyster mushroom, *Volvariella* and *Agaricus*.
4. Preparation of culture, mother spawn production, multiplication of spawn.

Semester -II

(C17MT21/E17MT04)Paper VI: Advanced Mycology

Unit I: Genetic development process in Mushroom cultivation: Genetically edited mushrooms. Selection, Anastomosis, Hybridization, Mutagenesis, Protoplast fusion, Genetic engineering.

Unit II: Genetically modified mushrooms: White mushrooms, Advantages and disadvantages.

Unit III: Mutation - Biochemical basis, induction. Reverse and suppressed mutations.

Unit IV: Mutagenic agents - Physical and chemical mutagens.

Unit V: Polyploidy - types, induction, role in plant breeding.

References

1. Gupta, P. K. Elements of Biotechnology. 2nd Edition (3rd Reprint) 2015.
2. Alice, D., Muthusamy and Yesuraja, M. (1999). Mushroom Culture. Agricultural College, Research Institute Publications, Madurai.

(C17MT22/E17MT05)Paper VII: Diseases and Problems in Mushroom cultivation

Unit I: Environmental challenges and Maintenance of Mushroom: Geographical condition for Mushroom cultivation: Climate, Soil, Moisture.

Unit II: Diseases: Common pest, microbes (Bacteria, Fungus and Virus).

Unit III: Diseases of Mushrooms: Brown black disease, yellowing of oyster mushrooms, Bacterial soft root fungal brown blotch, wet bubble, dry bubble, cob web, green blotch.

Unit IV: Principles of insect pest control: Principles and methods of pest management - chemical control.

Unit V: Integrated pest management.

References:

1. Pandey, B. P. 1996. A textbook of fungi.Chand and Company NewDelhi.
2. Pathak, V. N. and Yadav, N. (1998). Mushroom Production and Processing Technology. Agrobios, Jodhpur.
3. Kaul, T. N. 2001. Biology and conservation of mushrooms. Oxford and IBH publishing.

(C17LS23/E17LS05)LIFE SKILL

(Common to All Courses)

UNIT- I ATTITUDE : Positive thinking – Goal setting – Problem Solving and Decision making – Leadership and Team Work.

UNIT- II COMMUNICATION SKILLS: Oral communication: Concept of English language – Fluency – Verbal communication in official and public situations.

UNIT-III COMMUNICATION SKILLS: Written Communication: Comprehension – Writing a formal letter like application for Job, enquiry, reply, complaint and such others – preparation of Resume, Curriculum Vitae.

UNIT- IV COMPUTING SKILLS – 1: Introduction to Computers, its various components and their respective functions – Memory storage devices – Microsoft (MS) Office – MS Word.

UNIT - V COMPUTING SKILLS – 2 Internet Basics – Origin of Internet – MODEM – ISP – Upload – Download – e-mail – Origin of worldwide web (www) Browsers – Search engines.

Reference books:

Life skill, Manonmaniam Sundaranar University Publications Division (2011)

(C17MT24/E17MT06)Paper VIII: Entrepreneurship development in mushroom cultivation

Unit I: Trade secrets, copy rights, infringements problems.

Unit II: Harmonization of patent laws. Patenting and IPR.

Unit III: Special training for developing small scale industry from SIPOT, SIDCO, DIC, TIDAL park and TICAL park.

Unit IV: Bank loan & marketing network, developing small scale industry.

Unit V: Common Indian Mushrooms Production level, economic return,foreign exchange from mushroom cultivating countries.

References

1. Kaul T N 2001. Biology and conservation of mushrooms. Oxford and I BH publishing.
2. Balasubramanian, Bryce, Dharmalingam, Green and Jayaraman (Eds.), Concepts in Biotechnology, University Press, 1996.

(C17MTP2/E17MTP2)Paper X: Practical -II: Cultivation of Mushroom

1. Construction of mushroom cultivation shed.
2. Cultivation of mushroom: Tropical and temperate types using compost /paddy straw/Agricultural waste/sugar cane waste etc.
3. Determination of nutritional value: Protein,sugar,lipids,vitamins and minerals.
4. Identification of antimicrobial compounds and Flavanoids.
5. Processing and preservation of mushrooms.

References

1. PathakYadavGour (2010). Mushroom Production and Processing Technology, Published by Agrobios (India).
2. TewariPankajKapoor, S. C. (1988). Mushroom Cultivation. Mittal Publication, New Delhi.
3. Tripathi, D.P. (2005.) Mushroom Cultivation. Oxford and IBH Publishing Co. Pvt.Ltd, New Delhi.