



மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்
MANONMANIAM SUNDARANAR UNIVERSITY

**SYLLABUS FOR DIPLOMA IN MUSHROOM TECHNOLOGY
PROGRAM OFFERED THROUGH DIRECTORATE OF VOCATIONAL
EDUCATION (COMMUNITY COLLEGES AND VOCATIONAL SKILL DEVELOPMENT
CENTRES) FROM 2019 - 2020**



கல்விசார் நிலைக்குழுக் கூட்டம்

**MEETING OF THE STANDING COMMITTEE ON
ACADEMIC AFFAIRS HELD ON WEDNESDAY
THE 22nd JANUARY 2020**

DIPLOMA IN MUSHROOM TECHNOLOGY

காளான்வளர்ப்புத் தொழில்நுட்பத்தில் பட்டயம்

SCHEME OF EXAMINATION

Subject code	Title of the Course	Credit	Hours	Passing Minimum
Semester I				
C19MT11/E19MT01	Introduction to Mushroom	6	90	40/100
C19MT12/E19MT02	Mushroom Types and its Nutrient Profile	6	90	40/100
C19MT13/E19MT03	Techniques in Mushroom cultivation	6	90	40/100
C19CE10/E19CE10	Communicative English	6	90	40/100
C19MTP1/E19MTP1	Practical I- Covering first 3 Courses	4	120	40/100
Semester II				
C19MT21/E19MT04	Advanced Mycology	6	90	40/100
C19MT22/E19MT05	Diseases and Problems in Mushroom Cultivation	6	90	40/100
C19LS23/E19LS05	Life skill	6	90	40/100
C19MT24/E19MT06	Entrepreneurship development in Mushroom cultivation	6	90	40/100
C19MTP2/E19MTP2	Practical II - Covering first 3 Courses and Project	8	120	40/100

Eligibility for admission: Pass in 10thstd 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 Course is 40%. Classification will be done on the basis of percentage marks of the total marks obtained in all the Courses 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:-**

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

Second Semester:-

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

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

Semester-I

(C19MT11/E19MT01)Course I: Introduction to Mushroom

Unit I: **18 Hrs**

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

Unit II: **18 Hrs**

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: **18 Hrs**

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: **18 Hrs**

Morphological and Microscopical identification of mushrooms.

Unit V: **18 Hrs**

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.

Course II

(C19MT12/E19MT02)

Mushroom Types and its Nutrient Profile

Unit I: 18 Hrs

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

Unit II: 18 Hrs

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

Unit III: 18 Hrs

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

Unit IV: 18 Hrs

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

Unit V: 18 Hrs

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.

Course III

(C19MT13/E19MT03)Techniques in Mushroom Cultivation

Unit I: **18 Hrs**

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

Unit II: **18 Hrs**

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

Unit III: **18 Hrs**

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: **18 Hrs**

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

Unit V: **18 Hrs**

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

References **18 Hrs**

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.

Course IV

(C19CE10/E19CE10)Communicative English

1. **Basic Grammar:**

- a. Review of grammar
- b. Remedial study of grammar
- c. Simple sentence
- d. Word passive voice etc.

2. **Bubbling Vocabulary:**

- a. Synonyms
- b. Antonyms
- c. One – work Institution

3. **Reading and Understanding English**

- a. Comprehension passage
- b. Précis – writing
- c. Developing a story from hints.

4. **Writing English**

- a. Writing Business letters.
- b. Paragraph writing
- c. Essay writing
- d. Dialogue writing

5. **Speaking English**

- a. Expressions used under different circumstances
- b. Phonetics

Reference : 1. V.H.Baskaran – “English Made Easy”

2. V.H.Baskaran – “English Composition Made Easy”

(Shakespeare Institute of English Studies, Chennai)

3. N.Krishnaswamy – “Teaching English Grammar”

(T.R.Publication, Chennai)

4. “Life Skill” – P.Ravi, S.Prabakar and T.Tamzil Chelvam,

M.S.University, Tirunelveli.

Course V

(C19MTP1/E19MTP1) 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

(C19MT21/E19MT04) Course VI: Advanced Mycology

Unit I: **18 Hrs**

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

Unit II: **18 Hrs**

Genetically modified mushrooms: White mushrooms, Advantages and disadvantages.

Unit III: **18 Hrs**

Mutation - Biochemical basis, induction. Reverse and suppressed mutations.

Unit IV: **18 Hrs**

Mutagenic agents - Physical and chemical mutagens.

Unit V: **18 Hrs**

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.

Course VII

(C19MT22/E19MT05) Diseases and Problems in Mushroom cultivation

Unit I: **18 Hrs**

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

Unit II: **18 Hrs**

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

Unit III: **18 Hrs**

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: **18 Hrs**

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

Unit V: **18 Hrs**

Integrated pest management.

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.
3. Kaul, T. N. 2001. Biology and conservation of mushrooms. Oxford and IBH publishing.

Course VIII

(C19LS23/E19LS05) Life Skill

I Life Coping or adjustment

- (a) External and internal influence in one's life
- (b) Process of coping or adjustment
- (c) Coping with physical change and sexuality
- (d) Coping with stress, shyness, fear, anger far live and criticism.

II Attitude

- (a) Attitude
- (b) Self acceptance, self – esteem and self actualization
- (c) Positive thinking

III Problem Solving

- (a) Goal Setting
- (b) Decision Making
- (c) Time Management and stress Management.

IV Computers

- (a) Introduction to Computers
- (b) M.S.Office
- (c) Power Point

V Internet

- (a) Introduction to internet
- (b) E – mail
- (c) Browsing

References:

- 1) Life Skill Programme course I & II by Dr. Xavier Alphona MCRDCE Publications. R.K.Mutt Road, Chennai – 28
- 2) ஆளுமை பண்பு வளர்த்தல் மற்றும் தகவல் தொடர்பு by M.Selvaraj Community College,Palayamkottai
- 3) “Life Skill” –P.Ravi, S.Prabahar & T.Tamil Chelvam, M.S. University, Tirunelveli

Course IX

(C19MT24/E19MT06)

Entrepreneurship development in mushroom cultivation

Unit I: **18 Hrs**

Trade secrets, copy rights, infringements problems.

Unit II: **18 Hrs**

Harmonization of patent laws. Patenting and IPR.

Unit III: **18 Hrs**

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

Unit IV: **18 Hrs**

Bank loan & marketing network, developing small scale industry.

Unit V: **18 Hrs**

Common Indian Mushroomsn 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.

Course X

(C19MTP2/E19MTP2)Practical -II Cultivation of Mushroom and Project

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.
