JSS MAHAVIDYAPEETHA

JSS COLLEGE OF ARTS, COMMERCE AND SCIENCE

(Autonomous, 'A' Grade and 'College with Potential for Excellence')

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DEPARTMENT OF BOTANY (UG)

HORTICULTURE CURRICULUM

Career Oriented Course

W.e.f

2024-2025

LIST OF APPROVED PANEL OF EXAMINERS:

Sl. No	Name	Designation and DOB	Joining Date	Phone number
	Internal Examiners			
1.	Gayathri Devi N Jss College, Ooty Road, Mysore	Asst. Prof.	01-01-2005	8050684736
2.	Dr.Kiran B L JSS College, Ooty Road, Mysore	Asst. Prof.	23-09-2015	9638219347
	External Examiners			
3.	Dr. Hemavathi C Govt. First grade college, Vijayanagar, Mysuru	Asso. Prof. 05/04/1966	17/08/1992	9980748813
4.	Dr. Shivalingaiah Maharani`s Science College for Women, Mysore	Asst. Prof. 01/06/1968	08/01/1996	9036766869
5.	Dr. Purushotham S P Maharani`s Science College for Women, Mysore	Asst. Prof. 15/05/1967	02/08/1996	9448115524
6.	Dr. Lingaraju D P AVK College for Women, Hassan	Asst. Prof. 26/02/1965	23/10/2002	9108585024
7.	Dr. Basavaraju G L Govt College for Women, Mandya	Asst. Prof. 21/07/1976	30/01/2004	
8.	Dr. Devika M Saradavilas College, Mysore	Asst. Prof. 14/03/1970	14/12/2005	9880024483
9.	Dr. Pruthviraj Sri Mahadeshwara Govt. First grade college	Asso. Prof.		9448925262
10.	Dr. Nataraju Maharani`s Science College for Women, Mysore	Asso. Prof.		9448033901
11.	Dr. Suresh N S Maharani`s Science College for Women, Mysore	Asst. Prof. 25/02/1975	02/05/2006	9242243601
12.	Dr. Jayalakshmi B Maharani`s Science College for Women, Mysore	Asst. Prof. 18/11/1974	14/07/2006	9482640645
13.	Sowmya H K Govt Science College,Hassan	Asst. Prof. 18/06/1970	22/12/2007	7338466887
14.	Dr. Thoyajaksha Govt Science College, Hassan	Asst. Prof. 20/07/1970	24/12/2007	9743779983
15.	Dr. Sandhya Rani D Maharani`s Science College for Women, Mysore	Asst. Prof. 24/08/1972	24/12/2007	9448602597
16.	Dr. Pushpalatha H G Maharani`s Science College for Women, Mysore	Asst. Prof. 23/12/1979	26/12/2007	9480442844
17.	Dr. Ashok N Pyati Maharani`s Science College for Women, Mysore	Asst. Prof. 22/04/1970	28/12/2007	7204661365
18.	Dr. Deepa Hebbar Maharani`s Science College for Women, Mysore	Asso. Prof.		9632869690
19.	Indushree PES College, Mandya	Asst. Prof.		8151917465
20.	Dr. Lalitha V Maharani`s Science College for Women, Mysore	Asst. Prof.		8105004148
21.	Revanamaba B Maharani`s Science College for Women, Mysore	Asst. Prof.		9448528471
22.	Dr. Sharvani, K.A Yuvarajas college, Mysore.	Asst. Prof.		9845885896
23.	Dr. Krishna Yuvarajas college, Mysore.	Asst. Prof.		

24.	Dr. Krishnamurthy Yuvarajas college, Mysore.	Asst. Prof.		
25.	Kalpashree Yuvarajas college, Mysore	Asst. Prof.		8088413446
26.	Dr. Anil Kumar Yuvaraja College, Mysuru	Asst. Prof.		8970945497
27.	Dr. Girijamba Maharani`s Science College for Women, Mysore	Asst. Prof.		9945616792
28.	Dr. Netra Maharani`s Science College for Women, Mysore	Asst. Prof.		9620782198
29.	Dr. Poornima Yuvaraja College, Mysuru	Asst. Prof.		8217642534
30.	Nayana, K. N. Maharani`s Science College for Women, Mysore	Asst. Prof.		9964041544
31.	Dr. Shamala Maharani`s Science College for Women, Mysore	Asst. Prof.		7019453250

CAREER ORIENTED COURSE IN HORTICULTURE

Aim and objectives of the course:

1. To provide students with a broad educational background, which in addition to emphasizing agricultural sciences, gives an appreciation of horticulture's role in augmenting economic growth, development and improvement of society.
2. To prepare people enrolled in horticultural courses to contribute to public policy formulation through their own personal development as informed citizens.
3. To promote the importance of horticulture in food, medicinal and ornamental plant production, providing employment, improving the environment, creating and managing sports and recreation facilities, as one of the main leisure pursuits-gardening

Scope and relevance:

1. The Horticulture has gained importance in recent years as a significant component of agriculture. Summarizing the advantages of horticulture, it is stated that, horticultural crops provide better food, higher income- improving the economic status of the farmers, all the year round occupation to the farm population engaged in production, transportation, processing and marketing operations in addition to the entrepreneurs.
2. Horticultural farming promotes the development of natural resources, yields higher returns from land, enhances the land values, creates a better purchasing power among the people and as a consequence adds to the general prosperity.
3. Horticultural crops play an important role in Commerce, particularly in export trade and food processing industry, besides their value in human consumption.
4. Career opportunities include farm/ estate managers, plantation experts, supervisors, project coordinators, landscape architects and consultants, floral designers and horticultural therapists etc...
5. Professional qualification, combined with an inclination towards gardening produce efficient floriculturists, landscaping professionals.
6. Horticulture has also played a significant role in women empowerment, providing employment opportunities to them in mushroom cultivation, floriculture & self employment. Horticultural shows and exhibitions, bonsai, indoor and terrace gardening, rockery, dish and bottle gardening, vegetable seed production etc.
7. Help to face PGCET exams
8. Enlighten the society regarding plants & their importance.

Eligibility Criteria for Admission:

STUDENTS OF SCIENCE STREAM

Course No. 1: Certificate course in Horticulture

Those who complete I and II Semesters successfully are eligible.

Course No. 2: Diploma in Horticulture

With certificate in Horticulture, those who complete III & IV semester successfully are eligible.

Course No. 3: Advanced Diploma in Horticulture

With Diploma in Horticulture, those who complete V and VI Semesters successfully are eligible.

NOTE: The student has to attend 75% of the classes that held in each semester would be eligible for taking up the Final Exams.

CAREER ORIENTED COURSE

COURSE: HORTICULTURE

Certificate Course	- One year (I and II Semesters)
Diploma Course	- Two years (I to IV Semesters)
Advanced Diploma Course	- Three years (I to VI Semesters)

CERTIFICATE COURSE

I SEMESTER

Paper code: GHR101 **THEORY** **30 Hours**

3 hrs/Week

Basics of Horticulture

Total Marks 100: 80(Theory) +20 (Internal Assessment-Test)

UNIT I- Introduction to Horticulture **(2 Hours)**

Definition, Branches, Scope and Importance .

UNIT II- Basic requirements of Horticulture: (14 Hours)

1) **Soils:** Types, Physical characteristics

2) Climate: Types Humid, Arid and Semiarid. Temperature, Relative humidity and Rainfall,

3) **Garden implements and tools**

4) Manures, Fertilizers & improvement of soil fertility: introduction, important organic manures, chemical fertilizers, methods of application, nutrient requirements of vegetable crops, time of application.

5) Organic Farming: Organic farming practices – Raising of green manure crops (Leguminous Crops).

6) **Irrigation and water management:** introduction, factors determining irrigation, annual precipitation, period of moisture depletion, stages of the crops, types of the crops, soil types, rate of absorption by plants, nature of crops, system of irrigation, surface irrigation, sub soil irrigation, overhead system of irrigation.

UNIT III- Plant growth regulators in Horticulture: (8 Hours)

Introduction, induction, breaking of seed dormancy, fast growth of seedling, control of growth vigor, plant tissue culture, control of flowering, flower thinning, modification of sex expression, fruit thinning, induction of parthenocarpy and fruit ripening, control of fruit drops, weed control, control of plant growth.

UNIT IV- Classification of garden plants: (6 Hours)

Introduction, Annuals, Biennials, Perennials, Shrubs, Trees, Climbers, Succulents, Cacti, Ferns, Gymnosperms, Palms, Orchids, Bulbous Ornamentals.

Paper code: GHR102 **Certificate Course**

Basics of Horticulture

I Semester - Practicals

2 hrs/Week

Total Marks 50: 40(Practical) + 10 (Internal Assessment-Test)

1. Study of soil-types, water holding capacity.

2. Tools and Equipments used in Horticulture.

3. Identification of manures.

4. Study of methods of composting and making Vermicompost.

5. Biofertilizers – *Rhizobium, Azotobacter,* Phosphotisers. VAM

(Vesicular Arbuscular Mycorrhizal fungi, Blue green algae– Azolla.

6. Systems of irrigation

7. Classification of garden plants

Paper code: GHR102 **I Semester Practicals**

Scheme of Practical exam

Basics of Horticulture

Time: 3 Hours **Max. Marks: 40**

I. Identify 'A', 'B' & 'C' **3x3= 9 marks**

(A-Soil Types- Sandy, Loamy, Black Soil, B-Manures- Compost, *Rhizobium*, C-Fertilizers)

II. Perform the following experiment 'D'. **7 marks**

(D- Water holding capacity/ Arc Auxanometer Experiment)

III. Write critical notes 'E', 'F', 'G' & 'H' **3x4=12 marks**

(Tools and Equipments-Pruning Shear, Hedge Shear, Digging Fork, Pick Axe, Spade, Rose Can)

IV. Comment on 'I', 'J', 'K' & 'L' **3x4=12 marks**

(I & J- Systems of Irrigation-Surface/Drip/Sub Soil/Overhead Irrigation
K & L - Garden Plants- *Aloe vera, Opuntia, Cycas, Areca lutescens, Vanda)*

Note: Each student should submit the **duly valued and certified practical record/manual/ submissions** at the time of practical examination.

Paper code: GHR201 **CERTIFICATE COURSE**

II Semester- Theory

Nursery and Plant Propagation

30 Hours

2 hours/week

UNIT I: Establishment of Nurseries: (8 Hours)

Definition, importance of nurseries, classification of nurseries, and management of nurseries

Basic requirements for Nurseries:

1) Agro-climatic conditions
2) Topography
3) Selection of site
4) Selection of soil
5) Seed bed preparation
6) Water supply and irrigation
7) Parts of nursery- a) Building structures, b) Propagating structures- raising of seedlings

UNIT II: Management of nursery (6 Hours)

1) Irrigation
2) Nutrition
3) Weed control
4) Plant protection
5) Uprooting, packing and transplantation

UNIT III: Plant propagation: (6 Hours)

Introduction, sexual propagation- advantages, disadvantages, vegetative propagation- advantages and disadvantages, cuttage, layerage- ground layering, air layering, budding, graftage- principles and methods, micro propagation, transplanting.

UNIT IV: Training and pruning, tillage, mulching and weed management: **(10 Hours)**

Training- Introduction to training- principles, methods, training with and without support,

Pruning- thinning out, heading back, uses, special techniques and root pruning, ringing, notching, smudging, bending, coppicing, pollarding, lopping, pinching, disbudding, containment pruning, thinning.

Tillage- Definition**,** objectives, , tillage mediators-man powered, animal driven and machine powered, phases of tillage-primary, secondary and inter tillage

Mulching- Definition, purpose of mulching, types-organic and inorganic, demerits of mulching

Weed management-Common weeds of Horticulture.

Paper code: GHR202

CERTIFICATE COURSE
II SEMESTER- Practicals

Nursery and Plant Propagation

2 hrs/Week

Total Marks 80: 20(Theory) + 10 (Internal Assessment-Test)

1. Types of Nurseries
2. Plant propagation:
    a. Cuttage
    b. Layering
3. Plant propagation
    a. Grafting
4. Training and pruning- photographs
5. Inorganic and organic mulching
    a. Tillage- Man, Animal and machine
    b. Powered tillages
6. Common weeds of horticulture

Paper code: GHR202 **Certificate Course**

Scheme of Practical Exam

II Semester Practicals

Nursery and Plant Propagation

Time: 3 Hours **Max. Marks: 40**

I. Planning, layout and establishment of 'A' **7 marks**

A- Nursery

II. Perform the following experiments 'B', 'C', 'D'& 'E' **3x4=12marks**

B- Grafting- Wedge /Approach

C- Layering-Simple/Compound/Trench/Air layering

D- Budding- T- budding/Patch budding

E- Cutting- Leaf/ Root/ Stem

III. Identify with reasons 'F', 'G', 'H' & 'I' **3x4=12marks**

F & G-Tillage-Animal driven/Machine Driven/Man Driven Tillage. **H**-Mulching- Organic Mulching/ Inorganic Mulching

I- Common Weeds of Horticulture- Congress weed/Tridax/Digitaria/ Amaranthus

IV. Comment on 'J', 'K' & 'L' **3x3=9 marks**

J & K- Pruning (Types as mentioned in theory)

L- Training (Open/ modified/ central)

Note: Each student should submit the **duly valued and certified practical record/manual/ submissions** at the time of practical examination.

Theory Model Question Paper for I & II Semesters

Time: 3 Hrs **Max Marks: 80**

Instruction: Draw neat labeled diagrams wherever necessary

I. Define/ Explain any EIGHT of the following **8 X 1 = 8**

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

II. Write short notes on any FIVE of the following **5 X 3 = 15**

11.
12.
13.
14.
15.
16.
17.

III. Answer any FIVE of the following **5 X 5 = 25**

18.
19.
20.
21.
22.
23.
24.

IV. Describe any FOUR of the following in detail **4 X 8 = 32**

25.
26.
27.
28.
29.
30.

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