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VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India

વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી

યુનિવર્સિટી કેમ્પસ, ઉધના મગદલા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.

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-: પરિપત્ર :-

વિજ્ઞાન વિદ્યાશાખા હેઠળની સંલગ્ન બાયોસાયન્સ વિષય ચલાવતી અનુસ્નાતક કોલેજોના આચાર્યશ્રીઓ તથા ડિપાર્ટમેન્ટનાં વડાશ્રીઓને જણાવવાનું કે, શૈક્ષણિક વર્ષ ૨૦૧૯-૨૦ થી અમલમાં આવનાર M.Sc. Bio-Science Botany Sem-III & Sem-IV નાં ઈલેક્ટીવ કોર્સનાં અભ્યાસક્રમ અંગે વિચારણા કરતા બાયોસાયન્સ વિષયની અભ્યાસસમિતિની તા.૦૫/૦૪/૨૦૧૯ ની સભાનાં ઠરાવ ક્રમાંક: ૫ અન્વયે કરેલ નીચેની ભલામણ વિજ્ઞાન વિદ્યાશાખાની તા.૦૨/૦૫/૨૦૧૯ ની સભાનાં ઠરાવ ક્રમાંક:૨૨ અન્વયે સ્વીકારી એકેડેમિક કાઉન્સિલને કરેલ ભલામણ એકેડેમિક કાઉન્સિલએ તેની તા.૦૭/૦૬/૨૦૧૯ ની સભાના ઠરાવક્રમાંક: ૬૪ અન્વયે સ્વીકારી મંજૂર કરેલ છે. તેની જાણ સંબંધકર્તા શિક્ષકો અને વિદ્યાર્થીઓને કરવી, તદ્દઉપરાંત તેનો અમલ કરવો.

બાયોસાયન્સ વિષયની અભ્યાસસમિતિની તા.૦૫/૦૪/૨૦૧૯ ની સભાનાં ઠરાવ ક્રમાંક: ૫

- :: આથી ઠરાવવામાં આવે છે કે, એમસ.સી. બાયોસાયન્સ બોટની સેમેસ્ટર-૩ અને સેમેસ્ટર-૪ માટે નવા ઈલેક્ટીવ કાર્ય Horticulture-Paper-304 સેમેસ્ટર-૩ માટે અને Horticulture-Paper-404 સેમેસ્ટર-૪ માટે જૂન-૨૦૧૯ થી અમલમાં આવે તે રીતે મંજૂર કરી તે મંજૂર કરવા વિજ્ઞાન વિદ્યાશાખાને ભલામણ કરવામાં આવે છે.

વિજ્ઞાન વિદ્યાશાખાની તા.૦૨/૦૫/૨૦૧૯ ની સભાનાં ઠરાવ ક્રમાંક:૨૨

- :: આથી ઠરાવવામાં આવે છે કે, એમસ.સી. બાયોસાયન્સ બોટની સેમેસ્ટર-૩ અને સેમેસ્ટર-૪ માટે નવા ઈલેક્ટીવ કાર્ય Horticulture-Paper-304 સેમેસ્ટર-૩ માટે અને Horticulture-Paper-404 સેમેસ્ટર-૪ માટે જૂન-૨૦૧૯ થી અમલમાં આવે તે રીતે સ્વીકારી તે મંજૂર કરવા એકેડેમિક કાઉન્સિલને ભલામણ કરવામાં આવે છે.

એકેડેમિક કાઉન્સિલની તા.૦૭/૦૬/૨૦૧૯ની સભાનાં ઠરાવ ક્રમાંક: ૬૪

- :: આથી ઠરાવવામાં આવે છે કે, વિજ્ઞાન વિદ્યાશાખાએ તેની તા. ૦૨/૦૫/૨૦૧૯ ની સભાના ઠરાવ ક્રમાંક : ૨૨ અન્વયે ભલામણ કરેલ શૈક્ષણિક વર્ષ ૨૦૧૯-૨૦ થી અમલમાં આવનાર એમએસ.સી. બાયોસાયન્સ બોટની સેમેસ્ટર-૩ અને સેમેસ્ટર-૪ માટે નવા ઈલેક્ટીવ કાર્ય Horticulture-Paper-304 અને Horticulture-Paper-404 નો અભ્યાસક્રમ સ્વીકારી મંજૂર કરવામાં આવે છે.

બિડાણ: ઉપર મુજબ

ક્રમાંક : એકે./પરિપત્ર/૧૦૪૫૫/૧૯

તા. ૨૧-૦૬-૨૦૧૯

ઈ.ચા. કુલસચિવ

પ્રતિ,

- ૧) વિજ્ઞાન વિદ્યાશાખા હેઠળની બાયોસાયન્સ વિષય ચલાવતી અનુસ્નાતક કોલેજોના આચાર્યશ્રીઓ તથા ડિપાર્ટમેન્ટનાં વડાશ્રીઓ.
- ૨) અધ્યક્ષશ્રી, વિજ્ઞાન વિદ્યાશાખા.
- ૩) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વી. ન. દ. ગુ. યુનિવર્સિટી, સુરત.

...તરફ જાણ તેમજ અમલ સારૂ.

DEPARTMENT OF BIOSCIENCES
 VEER NARMAD SOUTH GUJARAT UNIVERSITY
 Outline of Syllabus for Semester System (2017-18)

M.Sc. Biosciences (Botany)

III Semester

Theory:

Paper	Subject	Credits
Bios -(B)-301	Phycology & Mycology	4
Bios -(B)- 302	Virology, Bacteriology and Plant pathology	4
Bios -(B)-303	Bryology, Pterology and Gymnosperms	4
Bios -(B)-304(i)	Medicinal Plants-I (Elective)	4
	OR	
Bios -(B)-304 (ii)	Plant Biotechnology-I (Elective)	
	OR	
Bios – (B)-304 (iii) Horticulture – I (Elective)*		

Practicals:

Bios -(B)- 305	Practicals Based on Bios-(B)-301 Bios-(B)-302 Bios-(B)-303 Bios-(B)-304	8
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M.Sc. Biosciences (Botany)

IV Semester

Theory:

Paper	Subject	Credits
Bios -(B)-401	Angiosperm taxonomy	4
Bios -(B)-402	Plant Anatomy & Histo-chemical Techniques	4
Bios -(B)-403	Embryology, Palynology and Paleobotany	4
Bios -(B)-404(i)	Medicinal Plants-II (Elective)	4
	OR	
Bios – (B)- 404(ii)	Plant Biotechnology-II (Elective)	
	OR	
Bios – (B)-404 (iii) Horticulture – II (Elective)*		

Practicals:

Bios -(B)-405	Practicals Based on Bios -(B)-401 Bios -(B)-402 Bios -(B)-403 Bios -(B)-404	8
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* New – introducing from the year 2019-20

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M.Sc.- III - Semester , Bioscience (Botany)

Bios - (B)- 304(iii) – Horticulture-I (Elective)

No.of Credits -4	hrs
Unit-I Scope of horticulture and its branches	15
<ul style="list-style-type: none">▪ Horticulture and its branches of study, Brief history, Scope, importance, necessity, advantages, prospectus and problems with respect to some horticultural crops.▪ Important of horticulture in present era because of its fulfill the basic thrust of food, provide skilled worker, increase economy revenue, ecofriendly, pollution reducing, reduce carbon footprint by increasing green belt.▪ Introduction of Biotechnology in field of horticulture. Introduction of Organic farming in Horticulture. Introduction of hydroponics in horticulture. Concepts of tissues culture; Sexual and asexual propagation of plants, micro –propagation, Selection and preparation of scion, wood, root stock scion incompatibility. Propagation structures.	
Unit-II Soil and fertility management for horticultural crops	15
<ul style="list-style-type: none">▪ Soil: Its formation, types, component, properties (biological Chemical and Physical). Acid Saline, alkaline soil and their reclamation, minerals nutrition and stress physiology, Fertilizers, organic manures and Biofertilizer. Study of Rhizospheric micro biome and application of bioinformatics.▪ Basic principles of irrigation, system and methods of irrigation	
Unit-III Gardening and Landscaping	15
<ul style="list-style-type: none">▪ Nursery beds and germination trays, seeding, pricking, transplanting, pot culture of plants, Trimming and pruning of plants.▪ Plant Propagation by cuttings, Grafting, Budding and Layering, Landscape Architecture▪ Planning and layout of orchards. Preparation of land for orchard development. Selection of plating material and transplanting, care and protection of young plants▪ Orchard management systems, Nutrition of fruit trees, irrigation and drainage of orchards. Training and pruning of fruits plants. Problems of fruiting, rejuvenation of old orchards.	
Unit-IV Pomology	15
<ul style="list-style-type: none">▪ Scope and importance, of pomology, Role of fruits in human nutrition, Classification of fruit crops.▪ Cultivation of tropical, sub-tropical and temperature fruit crops▪ Fruit preservation; present status, future prospectus nutritive value of fresh and processed fruits, Brief account on principles and methods of refrigeration, Canning, dehydration and chemical preservation.▪ Application of bioinformatics in fruit plant breeding.	

M.Sc.- IV- Semester , Bioscience (Botany)
Bios - (B)- 404(iii) – Horticulture-II (Elective)

No.of Credits -4	hrs
Unit-I Olericulture and cultivation techniques	15
<ul style="list-style-type: none">▪ Definition and scope of Olericulture, importance of vegetables in human diet. Classification of vegetables crops, Types of vegetable Garden, Location and site for vegetarian garden. Climate and soils for vegetables, Crop rotation.▪ Growing Vegetables-Transplanted, direct sown, irrigation and manuring of vegetable crops, Intercultural Operations in vegetables crops, Harvesting and marketing.▪ Cultivation of cole crops, Cucurbits , Leguminous crops , Solanaceous fruits vegetables, Malvaceous vegetables.	
Unit-II cultivation techniques of leafy and root vegetables	15
<ul style="list-style-type: none">▪ Cultivation of leafy vegetables (Indian Spinach, Fenugreek), Root vegetables (Carrot, Radish, Turnip, Beat Root) Tuber crops (Potato, Sweet potato, Colocasia) Bulbous vegetables (Onion, garlic), Salad crops (Lettuce).▪ Seed Production in vegetables: production of seed tuber in potato, seed production in self- pollinated crops (Tomato), seed production in Cross-Pollinated crops (Cucurbits), Seed Production in Root Crops (Carrot), Seed Production in onion.▪ Vegetable Preservation-Present Status, future scope, Nutritive value of fresh and processed vegetables, canning, dehydration and chemical presentation.	
Unit-III floriculture and ornamental gardening	15
<ul style="list-style-type: none">▪ Definition, Importance and scope of floricultural and Ornamental gardening. Principles of garden design, Garden layout and materials of garden design, garden operations.▪ Lawn: Importance of lawns, essentials of good lawn, Preparing new lawn, Lawn grasses, maintenance and care of lawns, repairs, avoiding weeds in lawns, non- grass lawn, The rock garden: The water garden; The terrace garden; Bonsai, Topiary.<ul style="list-style-type: none">i) Trees: Importance and different uses of trees, Selection of trees, Planting and after care of trees.ii) Shrubs: Importance of shrubs, Planning and planting of shrubbery and after care of shrubs.iii) Climbers: Importance of climbers, planting and after care of climbers	

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121

- Herbaceous annuals, their uses in the garden color scheme, method of cultivation, common garden annuals, Importance and types of indoor plants. Selection of indoor plants, Culture, care and maintenance of common indoor plants, Knowledge of Cacti. Bonsai.
- Cultivation of commercial flowers as rose, gladioli, tuberose, carnation, Chrysanthemum, orchids, jasmine, aster and marigold Cultivation of cut flower crops under protected conditions.
- Maintenance of cut flowers, stage of harvest of cut flowers, Vase life of cut Flowers under varying environment. Floral preservation, bud opening and holding solution. Techniques involved in gardening, packing storage and transportation of cut flowers.

Red

Chrysanthemum
long part

REFERENCE BOOKS:

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2. Vasil, I.K. and Thorpe, T.A. 1994. Plant Cell and Tissue Culture. Kluwer Academic Publishers, the Netherlands.
3. Raghavan, V. 1999. Developmental Biology of Flowering plants. Springer - Verlag, New York.
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5. Taiz, L. and Zeiger, E. 1998. Plant Physiology (2nd edition). Sinauer Associates, Inc., Publishers, Massachusetts, USA.
6. Thomas, B. and Vince-Prue, D. 1997. Photoperiodism in Plants (2nd edition). Academic Press, San Diego, USA.
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9. Mushroom Cultivation – 2018 by S.C. Tiwari & Pankaj Kapoor
10. Landscape Architecture In India, – 2013 by Mohammad Shaheer, Geeta Wahi Dua, Adit Pal
11. Landscape Architecture – Import, 5 May 2017 by Ryker Nelson
12. Textbook of Pomology by Edgar Crombie Syrawood Publishing House, 2016
13. Handbook Of Horticulture – 2003 by Chadha K L
14. Fundamentals Of Horticulture – 2018 by Jitendra Singh, Kalyani Publishers
15. Horticulture at a Glance for ICAR's Exams, JRF, SRF, NET, ARS, IARI, Ph.D Paperback – 2016 by D Ram & B B Singh, DG, ICAR Trilochan Mohapatra
16. Introduction To Horticulture – 2010 by Kumar N
17. Introduction to Floriculture 1980 by Roy A. Larson

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