

S-30th May, 2015 AC after Circulars from Circular No.1 & onwards++ - 32 -

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY**CIRCULAR NO.SU/Sci./B.Sc. Syll./31/2015**

It is hereby notified for information to all the concerned that, on the recommendation of the various Board of Studies, Ad-hoc Boards & Committees the Hon'ble Vice-Chancellor has accepted the **revised semester-wise syllabi in the Faculty of Science as under** on behalf of the Academic Council under Section-14[7] of the Maharashtra Universities Act, 1994 :-

Sr. No.	Name of the Subject	Semester
[1]	B.Sc. Automobile Technology IInd Year, [Three Year Degree Course].	III & IV
[2]	B.Sc. Horticulture IInd Year, [Optional].	III & IV
[3]	B.Sc. Chemistry IIIrd Year, [Optional].	V & VI
[4]	B.Sc. Analytical Chemistry IIIrd Year, [Optional].	V & VI
[5]	B.Sc. Agrochemical & Fertilizer IIIrd Year, [Optional].	V & VI
[6]	B.Sc. Geology IIIrd Year, [Optional].	V & VI
[7]	B.Voc. Multimedia & Animation, [Three Year Degree Course].	I to IV
[8]	B.Voc. [1] Industrial Automation, [2] Automobile & [3] Travel & Tourism, [Three Year Degree Course].	I to VI
[9]	B.Voc. Jewellery Design & Gemology, IInd Year [Three Year Degree Course].	III & IV
[10]	Diploma in Industrial Automation for Community College at University Campus.	

This is effective from the **Academic Year 2015-16 & onwards** as appended herewith.

All concerned are requested to note the contents of the circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
REF.NO.ACAD/SU/SCI/
2015/6860-7259
Date:- 08-07-2015.

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Director,
Board of College and
University Development.

S-30th May, 2015 AC after Circulars from Circular No.1 & onwards++

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Copy forwarded with compliments to:-

- 1] The Director, C.V.E.T., Dr. Babasaheb Ambedkar Marathwada University Campus, Aurangabad.
- 2] The Principals, affiliated concerned colleges,
Dr. Babasaheb Ambedkar Marathwada University

Copy to :-

- 1] The Controller of Examinations,
 - 2] The Director, [E-Suvidha Kendra], in-front of Registrar's Quarter,
Dr. Babasaheb Ambedkar Marathwada University,
 - 3] The Superintendent, [B.Sc. Unit],
 - 4] The Superintendent, [B.C.S. Unit],
 - 5] The Programmer [Computer Unit-1] Examinations,
 - 6] The Programmer [Computer Unit-2] Examinations,
 - 7] The Record Keeper.
- Dr. Babasaheb Ambedkar Marathwada University.

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**Dr Babasaheb Ambedkar Marathwada
University , Aurangabad**

Syllabus of Horticulture

B.SC. IInd Year

Semester III and IV

Effective from June 2015

Dr Babasaheb Ambedkar Marathwada University,
Aurangabad
B.Sc. IInd Year Horticulture Course Curriculum
(Semester Pattern)
Course Structure

Paper No.	Name of Course	Credit	Lectures	Marks
Semester I				
VII	Principles and Technology of Fruit gardening	3	45	50
VIII	Orchard Management of Fruit Crops	3	45	50
IX	Practical based on VII	1.5	45	50
X	Practical based on VIII	1.5	45	50
Semestert II				
XI	Cultivation Technology of fruit Crops	3	45	50
XII	Production Technology of Commercial Crops.	3	45	50
XIII	Practical based on XI	1.5	45	50
XIV	Practical based on XII	1.5	45	50

B.Sc. Second Year

Semester:- IIIrd

Paper No-VII

Paper title- Principles and Technology of Fruit gardening. (Theory)

Unit I

- 1) Fruit Gardening- Definition, Importance and scope (02).
- 2) Soil requirement of fruit crops. (02)
- 3) Climatic requirement of fruit crops.(02)
- 4) Climatic zones of Maharashtra/ India. (02)
- 5) Classification of fruit crops.(02)
- 6) Unfruitfulness of fruit crops. (02)
- 7) Growth and fruiting habit of fruit crops, fruit bud differentiation, Fruit setting and fruit drops. (03)

Unit II

- 8) Planning layout and selection of site for establishing an orchard. (03)
- 9) Methods and Systems of planting material. , after care of planting, fencing, role of wind brakes and shelter belts, high- density planting in mango, banana, sapta, grapes etc. (05)
- 10) Orchard management practices, Clean cultivation, crop rotation, intercropping , Multistoried cropping (05)
- 11) Role of mulching its merits and demerits (02).

Unit III

- 12) Inter cultivation operations in fruit crops (02)
- 1) Irrigation- water requirement of fruit crops. Methods of irrigation- Ring of basin furrow sprinkler and drip irrigation, Rain gun irrigation. (05)
- 13) Role of plant growth regulators on fruit crops (Its types) (03)
- 14) Insect pests and diseases management (05).

B.Sc. Second Year

Semester:- IIIrd

Paper No- VIII

PAPER TITLE- Orchard Management of Fruit Crops (*Theory*)

Unit I

- 2) Nutritional requirements of fruit crops of and manures in fruit gardening. (05)
- 3) Role of essential nutrients- Macro-micro nutrients. (05)
- 4) Basic principles of manuring in fruit crops. (05)

Unit II

- 5) Manures, Types of manures, Methods of preparation of manures, FYM, Compost, Urban compost, Vermi compost, green manuring and its role in fruit crops. (05)
- 6) Methods of application of manures. (05)
- 7) Principles and methods of application of fertilizers. (05)

Unit III

- 8) Role of Bio-fertilizers and liquid fertilizers in fruit crops (05)
- 9) Training and Pruning-Objects and methods of Training and Pruning (05)
- 10) Special Horticultural practices for inducing Fruiting in fruit crops. (05)
 - 11.1 Bending in Guava
 - 11.2 Notching in fig.
 - 11.3 Girdling in Grape.
 - 11.4 Ringing Mango.
 - 11.5 Root pruning in citrus.

B.Sc. Second Year

Sem.-IIIrd

Paper No IX

PAPER - Practical based on VII (*Practical*)

- 1) Layout of system of planting. (02)
- 2) Digging and filling of pits for fruit tree planation. (01)
- 3) Selection of planting material and transplanting of fruit crops. (01)
- 4) Study of flowering and fruiting habits in fruit trees. (01)
- 5) Intercultural operations in fruit crops. (01)
- 6) Identification, collection of important pest and disease of fruit crops. (02)
- 7) Method of control of pest and disease in fruit crops. (01)
- 8) Preparation and application of plant growth regulators(01)
- 9) Preparation of Bordeaux Mixture and pest. (01)
- 10) Irrigation layout (03)
 - 10.1 Ring and basin.
 - 10.2 Ridges and furrow
 - 10.3 Drip irrigation
 - 10.4 Sprinkler.
- 11) Visit to commercial orchard. (01)

B.Sc. Second Year

Sem.-IIIrd

Paper No X

PAPER Practical based on VIII (*Practical*)

- 1) Methods of preparation of FYM (01)
- 2) Methods of preparation of Compost. (01)
- 3) Methods of preparation of Green manure. (01)
- 4) Methods of preparation of Vermi-compost. (01)
- 5) Methods of application of Fertilizers. (01)
- 6) Methods of application of Bio-fertilizers. (01)
- 7) Methods of application of Liquid fertilizers. (01)
- 8) Layout methods of preparation of Bio-gas and bio stories. (01)
- 9) Special horticultural practices (05)
 - 1) Bahar treatment
 - 2) Notching in Fig
 - 3) Ringing in Mango
 - 4) Girdling in grape
 - 5) Bending in Guava
 - 6) Root proving in citrus
- 10) Systems of training in fig. (01)
- 11) Systems of pruning in grape, Ber and fig. (01)

B.Sc. Second Year**Semester:- IVth****Paper No- XI****Cultivation Technology of fruit Crops (*Theory*)**

Methods of cultivation of fruit crops:

History, origin, Area, Importance, scope, value, varieties, propagation methods, soil, climate, planation. After care, Cultural practices, Nutrition, Water requirement, intercropping, Important pest and diseases, harvesting, yield and marketing of following fruit crops.

Unit I

- 1) Mango (03)
- 2) Banana(03)
- 3) Citrus (03)
- 4) Guava (03)
- 5) Grapes (03)

Unit II

- 6) Sapota (03)
- 7) Papaya (03)
- 8) Fig (03)
- 9) Pomegranate (03)
- 10) Anola (03)

Unit III

- 11) Tamrind (03)
- 12) Jamun (02)
- 13) Custard apple (03)
- 14) Ber. (02)
- 15) Strawberry (02)
- 16) Pineapple (03)

B.Sc. Second Year

Semester:- IVth

Paper No- XII

PAPER TITLE- Production Technology of Commercial Crops.

Unit I

- 1) Scope and importance of spices and condiments, plantation crops, medicinal and aromatic plants. (03)
- 2) Study of important Spices and condiments (10)
Ginger, Turmeric, Pepper , Cardamom, Cumin , Cinnamon, Clove, Cumin, Fennel, Nutmeg,
- 3) Study of important Plantation Plants (02)
Coconut

Unit II

- 4) Study of important Plantation Plants (08)
Areca nut , Betel Vine, Cashew, Coffee ,Rubber Tree, Oil palm
- 5) Study of important Medicinal Plants (07)
Sarpagandha, Opium, Ocium, Periwinkle, Aloe Vera, Guggal, Medicinal Solanum,

Unit III

- 6) Study of important Medicinal Plants (06)
Senna, Isubgol, Pipali, Rauwolfia, Stevia, Coleus.
- 7) Study of important Aromatic Plants (09)
Lemongrass , Indian Basil, Citronella , Kewada, Mint, Palmarosa Grass , Rose Geranium,
Pachouli, Davana

B.Sc. Second Year

Sem.IVth

Paper No: XIII

PAPER - Practical based on paper no XI

- 1) Identification of fruit crops and their varieties. (02)
- 2) Role of Root stocks used in following crops.
 - 2.1 Mango (01)
 - 2.2 Citrus. (01)
 - 2.3 Sapota. (01)
 - 2.4 Grape (01)
 - 2.5 Custard apple. (01)
- 3) Mango malformation. (01)
- 4) Paclobutrazol treatment for alternate bearing of mango (01)
- 5) Banana plantation by rhizome/suckers. (01)
- 6) Bahar treatment in pomegranate. (01)
- 7) Plant protection in grape, pomegranate, Ber. (02)
- 8) Papain extraction from papaya. (01)
- 9) Visit to various commercial fruit orchard. (01)

B.Sc. Second Year

Semester:- IVth

Paper No- XIV

PAPER TITLE- Practical based on paper no XII

- 1) Storage of ginger rhizomes (01)
- 2) Processing of turmeric- Curing, Polishing, and coloring. (01)
- 3) Production of Coconut nursery Seedlings. (01)
- 4) Grafting of cashewnut. (01)
- 5) Training, trailing and lowering of of betel vines . (01)
- 6) Training and pruning in coffee. (01)
- 7) Processing of coffee. (01)
- 8) Processing of cashew nuts. (01)
- 9) Drying of stivia plant leaves. (01)
- 10) Lancing and latex collection of opium crop. (01)
- 11) Propagation of serpagandha. (01)
- 12) Distillation of citronella, Lemon grass and geranium. (01)
- 13) Plant protection in Spices and condiments , plantation crops, medicinal and aromatic plants (02)
- 14) Visit to plantation, aromatic and medicinal nursery. (01)

DR. BABASHEB AMBEDKAR MARATHWADA UNIVERSITY**FACULTY OF SCIENCE****B.Sc. IInd year / III & IV Semester Practical Examination****Subject: Horticulture (Paper No: IX & XIII) / New pattern**

Principles and Technology of Fruit gardening Cultivation Technology of fruit Crops

Batch No:	Date	Time 3 hrs
Center		Mark 100
Note: Draw neat and well labeled diagrams wherever necessary		
Q1)	Layout a plan of system of planting of given specimen- A	20
Q2)	A) Papain extraction of papaya / Mango malformation	10
	B) Paclbutrazol treatment / Bahar Treatment of Given Specimen - B	10
Q3)	Draw the-----type of irrigation layout of given specimen- C	20
Q4)	Spotting- 5 spots (Identify and comment)	20
	D _____, E _____, F _____, G _____, & H _____	
Q5)	Submission	
	A) Record book and Projects	10
	B) Viva voice	10

DR. BABASHEB AMBEDKAR MARATHWADA UNIVERSITY**FACULTY OF SCIENCE****B.Sc. IInd year / III & IV Semester Practical Examination****Subject: Horticulture (Paper No: X & XIV) / New pattern**

(Orchard Management of Fruit Crops & Production Technology of Commercial Crops.)

Batch No:	Date	Time 3 hrs
Center		Mark 100
Note: Draw neat and well labeled diagrams wherever necessary		
Q1)	Processing of given Specimen A	20
Q2)	A) Prepare the given specimen-B for girdling/ ringing/ Bending/Notching	10
	B) Demonstrate the method of central leader/open center system / Pruning for given specimen-C	10
Q3)	Layout a plan of Bio-gas/Compost by given method	20
Q4)	Drying/ Distillation of given specimen -D	20
Q5)	Submission	
	A) Record book and Projects	10
	B) Viva voice	10

DR.BABASAHEB AMBEDKAR MARATHWADA**UNIVERSITY****FACULTY OF SCIENCE****B.Sc. I & II Sememestr****Subject : - Horticulture****Paper : III, & VIth****Model Question Paper**

Time : 3 hr	Marks	100
Q.1. Long Question Long question	OR	10
Q.2. Long Question Short Notes (any two)	OR	10
Q.3. Long Question Short Notes (any two)	OR	10
Q.4. Write short notes (any two) a) b) c) d)		10
Q.5. Multiple Choice Question I to X		10

Recommended Books & Periodicals :

1. Propagation of Horticultural crops - Adriano & Brison, Tata-Mc Graw Hill.
2. Fruit Nursery in India L.Venketraman, Ministry of food, AGRI, New Delhi.
3. Chadha,K.L.and O.P.Pareek.(Eds.)1993.Advances in Horticulture: Fruits (Vols.1-4).Malhotra Publishing House, NewDelhi.
4. Gardner,V.R.,F.C.Breadford & H.D.Hooker.1966 Fundamentals of Fruit Production. Mc-Graw Hill Company, Inc.,NewYork.
- 5.Gardner,V.R.1966. Principles of Horticultural Production. Michigan State University Press, USA.
- 6.Gowrley,J.H.and F.S.Hawlelt.1949.Modern Fruit Production. MacMillan,NewYork
7. Bal,IS.1997.Fruit Production. Kalyani Publishers,NewDelhi
8. Childers,N.F.1965.Fruit Nutrition.Somerset Press Inc.,New Jersey,U.S.A.
- 09.Chundawat,B.S.1999. Nutrition Management of Fruit Crops. Agritech Publishing Company, Udaipur
- 10.Chadha,K.L.and P.Rethinam (Eds.),1994.Advances in Horticulture.Vol.9.Plantation and Spice Crops.Part I.Malhotra Publishing House.New Delhi
11. Atal,C.K.and B.M.Kapur.1982.Cultivation and Utilisation of Medicinal and Aromatic Plants. Regional research laboratory,Jammu.
- 12.Chadha,K.L.and Rajinder Gupta (Eds.),1995.Advances in Horticulture.Vol.11.Medicinal and Aromatic Plants.Malhotra Publishing House,NewDelhi.
- 13.Chaterjee,Aand S.C.Prakashi.1995.The Treatise on Medicinal Plants.Vol-1&2.Publication and Information directorate,New Delhi.
- 14.Chomcholor,N.and H.V.Henle.1993.Medicinal and Aromatic Plants in Asia.FAO,Bangkok.
15. Chadha,K.L.and Rajender Gupta.(Eds.)1995.Advances in Horticulture.Vol.11.Medicinal and Aromatic Crops. Malhotra Publishing House,New Delhi.

Periodicals : -

1. Indian Horticulture
2. Indian Journal of Horticulture
3. South Indian Journal of Horticulture
4. Panjab Horticulture Journal
5. Haryana Horticulture Journa

Prof. M. R. Jeawale
S.M.M. Iellam

