DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.

Syllabus of

B.Sc III YEAR

Agrochemicals and Fertilizers

Semester–V & VI

[Effective from 2011-12 & onwards]

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY
AURANGABAD

Agrochemicals and Fertilizers Curriculum
B.Sc. III Year
(Semester Pattern)
Course Structure

Paper No.	Title of Paper	Lectures	Marks
	SEMESTER V		
XV	Organic manures	45	50
XVI	Concentrated Manure and Fertilizer	45	50
XVII	Practicals	45	50
XVIII	Practicals	45	50
	SEMESTER VI		
XIX	Plant nutrition and fruit preservation	45	50
XX	Agricultural technology Agroindustry	45	50
XXI	Practicals	45	50
XXII	Practicals	45	50

B.Sc. Third Year
Semester-V
(Agrochemicals & Fertilizers)

Paper – XV

Periods : 45
Marks : 50

Organic Manure

1.	Definition of manures and fertilizers	1 hrs
2.	Farm yard manure : Preparation and Composition	6 hrs
3.	Improved methods of handling F.Y.M.	8 hrs
4.	Rural and Urban Compost : Preparation composition and appication to field	10 hrs
5.	Gobar gas : Preparation, Importance and application of Gobar gas manure	11 hrs
6.	Green manuring in situ and green leaf manuring	9 hrs

B.Sc. Third Year
(Agrochemicals & Fertilizers)

Paper – XVI

Periods : 45
Marks : 50

Concentrated Manure and Fertilizer

1. Edible and non edible oil cakes : Preparation application to the field 4 hrs

2. Manure from animal bone and blood 2 hrs

3. Organic farming : Modern approach to the farming and its effect on soils 8 hrs

4. Manufacture, properties, forms and Rate of application of following fertilizers 18 hrs
   a) Urea
   b) Ammonium Sulphate
   c) Super Phosphate
   d) Rock Phosphate
   f) Muriate of potash
   g) Sulphate of potash
   h) Micronutrient carriers
   j) Complex fertilizers

5. Basal and Split application of fertilizers 10 hrs

6. Process of symbiotic and nonsymbiotic nitrogen fixation 5 hrs

B.Sc. Third Year
(Agrochemicals & Fertilizers)

Paper – XVII

Periods : 45
Marks : 50

Practicals

1. Identification of different N, P and K fertilizers.
2. Identification of complex fertilizers and Micronutrient carriers
3. Qualitative test of urea and ammonium sulphate
4. Laboratory test of super phosphate and Rock phosphate
5. Qualitative test of micronutrient carriers
6. Laboratory test of sulphala and nitrophosphate
7. Determination of potassium from soil using soil kit.
8. To determine acidity of ammonium sulphate
9. Estimation of organic matter from compost
10. Estimation of available zinc from fertilizer

B.Sc. Third Year
(Agrochemicals & Fertilizers)

Paper – XVIII

Periods : 45
Marks : 50

Practicals

1. Estimation of Nitrogen

2. Nitrogen determination from rural compost sample

3. Identification of different oil cake samples
   (edible and non edible oil cake)

4. Determination of moisture from cotton seed cake

5. Determination of mineral matter from gr.nut cake.

6. To determine Ash percentage from saflower cake

7. Estimation of available nitrogen from urea

8. Estimation of available phosphate from super phosphate

9. Visit to soil testing laboratory

10. Visit to dairy farm and poultry farm

B.Sc. Third Year
Semester-VI
(Agrochemicals & Fertilizers)

Paper – XIX

Periods : 45
Marks : 50

Plant nutrition and fruit preservation

1.	Study of soil less culture and sand culture	5 hrs
2.	Physiological role of essential elements in plant	10 hrs
3.	Deficiency symptoms of essential elements in plants	4 hrs
4.	Principles of fruit preservation	2 hrs
5.	Important methods of fruit preservation	10 hrs
6.	Preparation of different fruit products	6 hrs
7.	Spoilage of canned product and methods to avoid spoilage	8 hrs

B.Sc. Third Year
(Agrochemicals & Fertilizers) B.Sc. Third Year
(Agrochemicals & Fertilizers)

Paper – XX

Periods : 45
Marks : 50

Agricultural technology and Agroindustry

1.	Diagnosis of saline, saline alkale and alkali soils with the methods of reclamation	9 hrs
2.	Methods of fertilizer placement and study of slow release fertilizers	6 hrs
3.	Critical stages of absorption of nutrients by the plant	6 hrs
4.	Study of cattle breeds and poultry breeds	6 hrs
5.	Management and working of dairy farm and poultry farms	6 hrs
6.	Fishery : Inland fishery, culture fishery and capture fishery	6 hrs
7.	Apiculture : Honey bee culture. Bee keeping and economic use of Honey and wax	6 hrs

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Paper – XXI

Periods : 45
Marks : 50

Practicals

1. Determination of PH from soil sample
2. Determination of PH from water sample
3. Determine electrical conductivity of soil sample
4. Identification of plant diseases and plant sample collection
5. To determine total soluble salt from soil extract
6. To determine ESP from soil extract
7. To determine SAR from soil extract
8. Estimation of lime requirement of soil
9. Preparation of apple jam.
10. Preparation of Guava Jelly

B.Sc. Third Year
(Agrochemicals & Fertilizers)

Paper – XXII

Periods : 45
Marks : 50

Practicals

1. Preparation of Lime Juice
2. Preparation of Lemon squash.
3. Determination of salinity of soil sample
4. Determination of salinity of water sample
5. Estimation of Ascorbic acid from Lemon juice
6. Estimation of reducing sugar from Lime juice
7. Estimation of non reducing sugar from fruit juice
8. Visit to fishery unit and fish seed farm.
9. Visit to Apiculture unit
10. Visit to fruit preservation industry

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(Agrochemicals & Fertilizers)

Reference Books (Theory and Practicals)

1. Plant nutrition and fruit preservation by Yawalkar.

2. Fish and fisheries of India by Jhingran.

3. Wealth of India suppliment IV.

4. Hand book of Agriculture - I.C.A.R.

5. Hand book of Animal Husbandry - I.C.A.R.

6. Plant physiology by Sundaram.

7. Soil fertility and fertilizer by Tisdale and Nelson.

8. Analytical agricultural chemistry by J.S. Kanwar

9. Practical manual for introductory by J.S. Knwar

10. Crop production and field experimentation by Vaidya and Sahashrabuddhe.

11. Manures and Fertilizers by Yawalkar

Note : Excursion are compulsory of B.Sc. III Year students. A report and Viva on the excursion shall carry ten marks in each practical paper of B.Sc. III Year i.e. paper XI and XII

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