

DR.BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY**CIRCULAR NO.SU/Sci.& Tech./B.Voc./33/2018**

It is hereby inform to all concerned that, on the recommendation of the Dean, Faculty of Science & Technology, the Hon'ble Vice-Chancellor has accepted the **following curriculum under B.Voc. programme viz: Certificate, Diploma, Advanced Diploma and B.Voc. Degree** in his emergency powers under section 12(7) of the Maharashtra Public Universities Act, 2016 on behalf of the Academic Council as appended herewith:

1.	B.Voc. Industrial Automation,
2.	B.Voc. Automobile Technology,
3.	B.Voc. Farm Equipment and Machinery,
4.	B.Voc. I.T.Skills and Software Development,
5.	B.Voc. Architectural Planning and Interior Design,
6.	B.Voc. Dairy Products,
7.	B.Voc. Drill Technology,
8.	B.Voc. Plant Tissue Culture and Green House Technology,
9.	B.Voc. Renewable Energy Source,
10.	B.Voc. Computer Hardware & Networking Maintenance.
11.	B.Voc.Food Processing and Preservation.
12.	B.Voc. Sustainable Agriculture.
13.	B.Voc. Bioproducts technician

This is effective from the Academic Year 2018-2019 and onwards.

This curriculum are also available on the university website

www.bamu.ac.in

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

University Campus,
Aurangabad-431 004.
Ref.No.
SU/B.Voc/2018/21709-22148
Date:- 12-12-2018

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Deputy Registrar,
Syllabus Section.

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Copy forwarded with compliments to :-

- 1] **The Principals, affiliated concerned Colleges,
Dr. Babasaheb Ambedkar Marathwada University.**
- 2] **The Director, University Network & Information Centre, UNIC,
with a request to upload this Circular on University Website.**

Copy to :-

- 1] The Director, Board of Examinations & Evaluation, Dr.BAMU,A'bad.
- 2] The Section Officer, [BCS Unit] Examination Branch,
- 3] The Section officer, [Eligibility Unit], Dr.BAMU,A'bad.
- 4] The Programmer [Computer Unit-1] Examinations, Dr.BAMU,A'bad.
- 5] The Programmer [Computer Unit-2] Examinations, Dr.BAMU,A'bad.
- 6] The In-charge, [E-Suvidha Kendra], Rajarshi Shahu Maharaj
Pariksha Bhavan, Dr. Babasaheb Ambekar Marathwada University.
- 7] The Public Relation Officer, Dr.BAMU,A'bad.
- 8] The Record Keeper. Dr.BAMU,A'bad.

SYLLABUS OF B. VOC. IN DRIP TECHNOLOGY

Scheme for Skill Component B. Voc. (Drip Technology)**M.S.S ATRS COLLEGE TIRTHPURI**

TQ.GHANSAWANGI DIST. JALNA

	Title of the Paper	Total Hours	Credits
Semester – I Level- 5	General Agriculture-I	136	9
	General Agriculture Practical-I	114	9
	Total	250	18
Semester – II Level -5	Crop Science/Agronomy-II	136	9
	Crop Science /Agronomy Practical-II	114	9
	Total	250	18
Semester – III Level -6	Micro Irrigation-III	90	9
	Micro Irrigation Practical-III	180	9
	Total	270	18
Semester – IV Level -6	Irrigation-IV	90	9
	Irrigation Practical-IV	180	9
	Total	270	18
Semester – V Level -7	Design, Operation and Maintenance-V	90	4
	Design, Operation and Maintenance Practical-V	180	6
	Field work-I	25	3
	Project work-I	75	5
	Total	370	18
Semester – VI Level -7	Soil Science-VI	90	4
	Soil Science Practical-VI	180	6
	Field work-II	25	3
	Project work-II	75	5
	Total	370	18
Grand Total		1780	108


Principal
M.S.S. Arts College Tirthpuri
Tq. Ghansawangi, Dist. Jalna

B.VOC (Drip Technology)

Semester – I

Paper –I: General Agriculture

Credit: 09

Unit I: Introduction to Agriculture: Importance of agriculture to the national economy, Land and its uses, Development of agriculture, Sustainable agriculture and Good Agricultural Practices

Unit II: Types of Soil: Laterite Soil, Tropical Red Soil, Red Soil Prairie Soil, Chernozem or Black Soil Chestnut Soil, Tundra Soil

Unit III: Inter Cultivation Practices: Weeding, Raise beds, Earthing up, Pruning, Stess to Crop

Unit IV: Water Management: Setting Water Policy, Developing Statuary Water Sharing Plans, Monitoring the Quantity and Quality of water

Unit V: Types of Crops: Fruits: Citrus, Grapes, Banana, Orange, Chickoo, lemon, Pomegranate, Watermelon, Guava, Papa

Unit VI: A) Vegetables: Tomato, Chilly, Brinjal, Cabbage, Cauliflower, Potato, And Onion

Unit VII: B) Flowers: Rose, Lilly, Mogra, Carnation, And Marigold

Unit VIII: Fooder Crops: Barley, Grass, Corn, Milet, Clover, wheat, Ryegrass

B.VOC (Drip Technology)

Semester – I

Paper –I: General Agriculture Practical

Credit: 09

Unit I: Introduction to Agriculture:

Unit II: Types of Soil:

Unit III: Inter Cultivation Practices:

Unit IV: Water Management:

Unit V: Types of Crops: Fruits

Unit VI: A) Vegetables:

Unit VII: B) Flowers:

Unit, VIII: Fooder Crops:

B.VOC (Drip Technology)

Semester – II

Paper - II: Crop Science / Agronomy

Credit: 09

Unit I: Cultivation of Crops: Definition of Cultivation, Crops: Cotton, Sugarcane, Pomegranate,

Unit II: Disease and Pest Control: Biological Pest Control, Physical Pest Control Weeds, Insect, Fungal Disease

Unit III: Post Harvesting and Technology: Importance, Post harvest loss, Priorities and Strategies, components of the system includes potential of income and Employment generation through post harvest operation, Storage Marketing

Unit IV: Agricultural Training Financial Training: Field Crop Training, Sustainable Agriculture Training, Introduction to the agriculture sector,

Unit V: Financial Training: Basic of value Chain financing, financial sector trends, Agriculture Loan product profiles.

Unit VI: Cropping system and Practices: Monoculture, Rotation, Multiple Cropping and Intercropping, Seedbed Preparation, Conservation Tillage systems and practices.

Unit VII: Intergraded pest Management: Pests control and Resistance Management 1) Insects 2) Diseases 3) Weeds 4) Nematodes

Unit VIII: Crop Breeding and Improvement: A) Genetics, B)Introduction –Plant, C)Selection D)Hybridization E) Mutation F) Biotechnology

B.VOC (Drip Technology)

Semester – II

Paper - II: Crop Science / Agronomy Practical Credit: 09

Unit I: Cultivation of Crops:

Unit II: Disease and Pest Control:

Unit III: Post Harvesting and Technology:

Unit IV: Agricultural Training Financial Training:

Unit V: Financial Training

Unit VI: Cropping system and Practices:

Unit VII: Intergraded pest Management: Pests control and Resistance Management

Unit VIII: Crop Breeding and Improvement:

B.VOC (Drip Technology)

Semester – III

Paper – III: Micro Irrigation

Credit: 9

Unit I: Types of Irrigation: Surface, Sprinkler, Drip/Trickle, Subsurface, Micro Irrigation techniques, Pivot Irrigation, Furrow irrigation, Modern Irrigation.

Unit II: Methods of Irrigation: A) Surface irrigation Methods a) Wild Flood Irrigation b) Border strip c) Check-Basin

Unit III: B) Furrow method: i) Every furrow irrigation ii) alternate furrow iii) Skip furrow iv) Paired row v) Wide spread furrow irrigation

Unit IV: Advance Method of Irrigation: Drip Irrigation, Sprinkle Irrigation

Unit V: Component s of Methods of Irrigation: Components of Drip Irrigation Methods
Components of Sprinkle Irrigation Methods

Unit VI: Benefits of Methods of Irrigation: Saves times, saves money, Saves water, improves growths

Unit VII: Chmigation: Chemigation equipment, Chemigation injection through Nitrogen, Phosphorus, Pesticide, Chemigation benefits to crops Chemigation equipment,

Unit VIII: Fertigation: Chemigation injection through Nitrogen, Phosphorus, and Pesticide
Chemigation benefits to crops

B.VOC (Drip Technology)

Semester – III

Paper – III: Micro Irrigation Practical

Credit: 9

Unit I: Types of Irrigation:

Unit II: Methods of Irrigation: A) Surface irrigation Methods

Unit III: B) Furrow method

Unit IV: Advance Method of Irrigation:

Unit V: Component s of Methods of Irrigation:

Unit VI: Benefits of Methods of Irrigation:

Unit VII:-Chmigation:

Unit VIII: Fertigation:

B.VOC (Drip Technology)

Semester – IV

Paper –IV: Irrigation

Credit: 9

Unit I: Types of Irrigation: Surface Irrigation, Localized / Drip Irrigation, Sprinkler Irrigation

Unit II: Traditional Method of Irrigation: Ra-hat System, Pully System, and Chain Pump System

Unit III: Water Recourses: Surface Water Resources, Under Ground Water Recourses

Unit IV: Land Grading: Introduction, Criteria for land grading, Land Clearing, Land leveling design methods, Earthwork quantities, Equipment for grading and field layout.

Unit V: Soil Water Plant Relationship and Stress Physiology: Soil Physical properties influencing Irrigation such as soil texture, soil structure, Bulk density, Capillary and non-capillary pores, soil consistency, Volume and mass relationships of soil constituents

Unit VI: Water relations of soil: Kinds of soil water Movement of water into soils, Infiltration, factors affecting infiltration rate,

Unit VII: Measurement of evapotranspiration: Lysimeter experiment, Field experimental plots, soil moisture depletion studies, water balance method

Unit VIII: Depth of Irrigation: Net Irrigation requirement, gross irrigation requirement, Irrigation frequency, Irrigation period.

B.VOC (Drip Technology)

Semester – IV

Paper –IV: Irrigation Practical

Credit: 9

Unit I: Types of Irrigation:

Unit II: Traditional Method of Irrigation:

Unit III: Water Recourses:

Unit IV: Land Grading:

Unit V: Soil Water Plant Relationship and Stress Physiology:

Unit VI: Water relations of soil:

Unit VII: Measurement of evapotranspiration:

Unit VIII: Depth of Irrigation:

B.VOC (Drip Technology)**Semester – V****Paper –V: Design, Operation and Management Credit: 04 Marks:**

Unit I: Advanced Irrigation System Design: Past, Present and Future need of Micro Irrigation system, Role of Govt. for the Promotion of Micro irrigation in India, Merits and demerits of micro irrigation system, Basic Variables involved in design of irrigation methods.

Unit II: Micro Irrigation system Design: History and scope of Micro- irrigation system, merits and demerits of micro- irrigation system, sprinkler irrigation crop suitability, types, components, design, design synthesis, Pumps and pressure unit selection, Operation and Maintenance, Quality of irrigation water, cost estimation of micro irrigation,

Unit III: Micro Irrigation System Survey: Drip Irrigation System Survey, Sprinkler Irrigation System Survey,

Unit IV: Trickle Irrigation: Different types of trickle, components of trickle system, planning the trickle system and design strategy selection and design criteria for emitters, lateral manifold and main pipe system design, clogging, filtration, fertigation and chemigation, Cost economics of the system.

Unit V: Design of Micro Irrigation System: Design of Drip Irrigation System, Design of Sprinkler Irrigation System

Unit VI: Installation of Micro Irrigation: Installation of Drip, Installation of Sprinkler, Identify, select, use the appropriate tools for installation, Identify select and use the micro irrigation, check the whole system after installation of the system,

Unit VII: Maintenance of Micro Irrigation System: Drip Irrigation System Maintenance, Sprinkler Irrigation System Maintenance

Unit VIII: Layout of Micro Irrigation System: Study the basics of crop cultivation, familiarize with Sprinklers, Foggers and misters, Design Micro Irrigation system, Plan the layout for micro irrigating system, Handle the site deviation

B.VOC (Drip Technology)**Semester – V****Paper –V: Design, Operation and Management Practical****Credit: 06 Marks:**

Unit I: Advanced Irrigation System Design:

Unit II: Micro Irrigation system Design:

Unit III: Micro Irrigation System Survey:

Unit IV: Trickle Irrigation:

Unit V: Design of Micro Irrigation System:

Unit VI: Installation of Micro Irrigation:

Unit VII: Maintenance of Micro Irrigation System:

Unit VIII: Layout of Micro Irrigation System:

Field work –I**Semester – V&VI****Credit: 03**

Project work –I**Semester – V&VI****Credit: 05**

B.VOC (Drip Technology)**Semester – VI****Paper –VI: Soil Science****Credit: 04 Marks:**

Unit I: Soil Science: Scope of soil Physics its relation with other Branches of soil science , soil as a three phase system, soil texture textural classes , Mechanical analysis, Soil consistence , Dispersion and workability soils,

Unit II: Soil Structure: Soil structure genesis, types, Characterization and Management , soil aggregation, soil tilt, soil crusting-Mechanism, soil conditioners pudding, clod formation

Unit III: Formation of Soil and Types: Relief, Climate, Parent rock, Time, Biotic Factors
Types of Soil: Litterate Soil, Tropical Red Soil, Red Soil Prairie Soil, Chernozem or Black Soil Chestnut Soil, Tundra Soil

Unit IV: Properties of Soil: Fertility, Structure, Density, Stability, Color, And Temperature

Unit V: Soil Testing: Physical Properties of soil testing, chemical properties of soil testing,

Unit VI: Water Testing: Physical properties of water testing, chemical properties of water testing

Unit VII: Nutrient Management: Sources of Plant nutrients, Atmosphere, water, minerals sources of exchange capacity in soil, Nutrient pools, soil solution, Organic matter, exchangeable ions,

Unit VIII: Soil Fertility and Productivity: Factors affecting, Features of a good soil Management, Problems of supply and factors affecting availability of nutrients, Relation between nutrient supply and crop Growth organic farming, basic concepts and definitions.

B.VOC (Drip Technology)

Semester – VI

Paper –VI: Soil Science Practical

Credit: 06 Marks:

Unit I: Soil Science:

Unit II: Soil Structure:

Unit III: Formation of Soil and Types:

Unit IV: Properties of Soil:

Unit V: Soil Testing:

Unit VI: Water Testing:

Unit VII: Nutrient Management:

Unit VIII: Soil Fertility and Productivity:

Field work –II

Semester – VI

Credit: 03

Project work -II

Semester – VI

Credit: 05



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