



ANDHRA KESARI UNIVERSITY ::ONGOLE

CURRICULAR FRAMEWORK **B.VOC. (Agriculture)**

FROM THE A.Y. 2025-26 batch (Major + Minor with CSP & VI Semester Internship)

1st Year - Semester I									
Sl. No	Category	Course No	No. of Hours		Total No. of Hours	No. of Credits		Total No. of Credits	
			Theory	Practical		Theory	Practical		
1	Major – Core (Basics in crop production and crop protection)	I	3	2	5	3	1	4	
2	Major – Core (Basics of Agricultural Sciences)	II	3	2	5	3	1	4	
3	AECC - English	I	4	0	4	3	0	3	
4	AECC -MIL (Telugu/Hindi/Sanskrit)	I	4	0	4	3	0	3	
5	Skill Enhancement Course (SEC) Intro' to Artificial Intelligence	I	4	2 (Practice)	6	4	0	4	
End of Semester I of 1st Year		5	18	6	24	16	2	18	
1st Year - Semester II									
Sl. No	Category	Course No	No. of Hours		Total No. of Hours	No. of Credits		Total No. of Credits	
			Theory	Practical		Theory	Practical		
1	Major – Core (Principals of Agronomy)	III	3	2	5	3	1	4	
2	Major – Core (Introduction to Soil Science)	IV	3	2	5	3	1	4	
5	English	II	4	0	4	3	0	3	
6	MIL (Telugu/Hindi/Sanskrit)	II	4	0	4	3	0	3	
7	Multidisciplinary Course (Introduction to Social work)	I	2	0	2	2	0	2	
8	Skill Enhancement Course (SEC) Application of Artificial Intelligence (Discipline Specific)	II	4	2 (Practice)	6	4	0	4	
9	Indian Knowledge System	I	2	0	2	0	0	0	
10	Community Service Project (minimum of 80 hours with 1 Credit)								1
End of Semester II of 1st Year		7	22	6	28	18	3	21	

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2nd Year - Semester III								
Sl. No	Category	Course No	No. of Hours		Total No. of Hours	No. of Credits		Total No. of Credits
			Theory	Practical		Theory	Practical	
1	Major – Core (Agronomy of field crops)	VI	3	2	5	3	1	4
2	Major – Core (Manures, fertilizers and soil fertility management)	VII	3	2	5	3	1	4
3	Major – Core (Introduction to Entomology)	VIII	3	2	5	3	1	4
4	Minor (Fundamentals of Genetics)	I	3	2	5	3	1	4
5	AECC (Creative Writing/Business Writing in English)	III	4	0	4	3	0	3
6	AECC (Creative Writing/Journalistic Writing in MIL - Telugu/Hindi/Sanskrit)	III	4	0	4	3	0	3
7	Multidisciplinary Course (Introduction to Public Administration)	II	2	0	2	2	0	2
8	Skill Enhancement Course (SEC) Design Thinking/Problem Solving / Others	III	2	0	2	2	0	2
End of Semester III of 2nd Year		8	24	8	32	22	4	26

2nd Year - Semester IV								
Sl. No	Category	Course No	No. of Hours		Total No. of Hours	No. of Credits		Total No. of Credits
			Theory	Practical		Theory	Practical	
1	Major – Core (Introduction to Pathology)	IX	3	2	5	3	1	4
2	Major – Core (Pests of Field crops and their Management)	X	3	2	5	3	1	4
3	Major – Core	XI	3	2	5	3	1	4

	(Diseases of field crops and their management)							
4	Minor (Horticulture)	II	3	2	5	3	1	4
5	Multidisciplinary Course (Introduction to Nanotechnology)	IV	2	0	2	2	0	2
6	Skill Enhancement Course (SEC) Design Thinking/Problem Solving / Others	IV	2	0	2	2	0	2
End of Semester IV of 2nd Year		6	16	8	24	16	4	20

3rd Year - Semester V								
Sl.No	Category	Course No	No. of Hours		Total No. of Hours	No. of Credits		Total No. of Credits
			Theory	Practical		Theory	Practical	
1	Major - Core(Principles of Plant Breeding)	V	3	2	5	3	1	4
2	Major – Elective (Fundamentals of Genetics)	XII	3	2	5	3	1	4
3	Major – Elective (Fundamentals of Crop Physiology)	XIII	3	2	5	3	1	4
4	Minor (Principles of Organic farming)	III	3	2	5	3	1	4
5	Minor (Production technology Of fruits and Vegetables)	IV	3	2	5	3	1	4
6	Environmental Education	I	2	0	2	2	0	2
End of Semester V of 3rd Year		6	17	10	27	17	5	22

3rd Year - Semester VI								
Sl.No	Category	Course No	No. of Hours		Total No. of Hours	No. of Credits		Total No. of Credits
			Theory	Practical		Theory	Practical	
1	Major – Elective (weed and Water mangement)	XIV	3	2	5	3	1	4
2	Major – Elective (Pests of Horticultural	XV	3	2	5	3	1	4

	crops and Productive entomology)							
3	Minor (Principles of Seed Technology)	VII	3	2	5	3	1	4
4	Minor (Introduction to Production economics and Farm management)	VIII	3	2	5	3	1	4
5	Semester Internship (minimum of 180 hours with 3 Credits)							3
End of Semester VI of 3rd Year		4	12	8	20	12	7	19

4th - Year - Semester VII								
Sl.No	Category	Course No	No. of Hours		Total No. of Hours	No. of Credits		Total No. of Credits
			Theory	Practical		Theory	Practical	
1	Major – Core (Agriculture Microbiology)	XII	3	2	5	3	1	4
2	Major – Core (Insect ecology and integrated pest management)	XIII	3	2	5	3	1	4
3	Major – Core (Farm Power and Machinery)	XIV	3	2	5	3	1	4
4	Major – Elective (Rainfed Agriculture and watershed management)	V	3	2	5	3	1	4
5	Major – Elective (Principles of Seed technology)	VI	3	2	5	3	1	4
6	OOTC	I	2		2	2		2
7	IKS	I	2		2		Audit Course	
End of Semester VII of 4th Year		7	19	10	29	17	5	22
4th - Year - Semester VIII								

Sl.No	Category	Course No	No. of Hours		Total No. of Hours	No. of Credits		Total No. of Credits
			Theory	Practical		Theory	Practical	
1	Major – Core (Principles of Plant Biotechnology)	XII	3	2	5	3	1	4
2	Major – Core (Breeding of Field Crops)	XIII	3	2	5	3	1	4
3	Major – Core (Fundamentals of Rural Sociology and extension education)	XIV	3	2	5	3	1	4
4	Major – Elective (Principles of Organic farming)	V	3	2	5	3	1	4
5	Major – Elective (Production technology of fruits and vegetables)	VI	3	2	5	3	1	4
6	OOTC	I	2		2	2		2
7	IKS	I	2		2		Audit Course	
End of Semester VIII of 4th Year		7	19	10	29	17	5	22

A. R. Ramesh



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B. VOCATIONAL COURSE

AGRICULTURE (Honours)

2025-26 Admitted Batch

Batch 2 Year Semester- III

Courses 5: AGRONOMY OF FIELD CROPS

(CREDITS 3+1=4)

UNIT-I:

- CEREALS: Rice, wheat, Maize

UNIT-II:

- MILLETS: Sorghum, Pearl millet, Finger millet, Proso millet, Kodo millet, Foxtail millet, Little millet, Barnyard millet

UNIT-III:

- PULSES: Pigeon pea, Green gram, Black gram, Bengal gram, Peas, Horse gram, Cowpea

UNIT-IV:

- OIL SEEDS: Ground nut, Sesame, Sunflower, Castor, Rape seed, mustard, safflower, niger,

UNIT-V:

- COMMERCIAL & FIBER CROPS: Sugarcane, Tobacco, Cotton, Jute, Mestha, Sunhemp

Reference Books

1. Reddy, S R and Reddi Ramu 5th edition 2016, Agronomy of Field Crops- kalyani publishers, Ludhiana.
2. Chidda Singh, Singh, P and Singh R, Modern Techniques of Raising field crops-oxford publishing house, New Delhi.
 3. Rajendra Prasad 2004 text book of Field Crop Production Volume i, Volume ii
 4. Panda S C 2014 Agronomy of Fodder and forage crops, kalyani publishers Ludhiana

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AGRONOMY OF FIELD CROPS (PRACTICAL)

1. Identification of cereals, millets, pulses, oil seed, sugar and fibre crops in the crop cafeteria.
2. Practicing various nursery types and main field preparation for field crops.
3. Acquiring skill in different seed treatment techniques in important field crops.
4. Estimation of plant population, seed rate and fertilizer requirement for important field crops.
5. Acquiring skill in field preparation, sowing and manuring of crops under pure and intercropping situations for field crops.
6. Acquiring skill in using seed drill for sowing operations.
7. Observations on growth parameters of cereals, millets, pulses, green manures and forage crops.
8. Study on yield parameters and estimation of yield in field crops.
9. Collection of seeds of field crops.

A. V. Ramana

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Batch 2 Year Semester- III

Courses 6: MANURES, FERTILIZERS AND SOIL FERTILITY MANAGEMENT (CREDITS 3+1=4)

UNIT I

- Manures – classification of manures – bulky organic manures - methods of composting – concentrated organic manures – green manures – biogas plant – vermicomposting

UNIT II

- Commercial fertilizers – straight fertilizers – Nitrogen fertilizers – phosphorus fertilizers – potassic fertilizers

UNIT – III

- Complex fertilizers – mixed/ bulk blended fertilizers – secondary nutrient fertilizers – micronutrient fertilizers – fertilizer control order and regulations

UNIT IV

- Methods of fertilizer application – Seed coating, pelletization, seedling dipping – Nutri seed pack – Soil Application – Foliar spray – Fertigation – water soluble fertilizers, fertigation scheduling (Fertilizer – water interaction, fertilizer solubility, comparison of fertilizer application methods).

UNIT V

- Nutrient management concepts – INM, STCR, IPNS, SSNM and RTNM. Nutrient use efficiencies of major and micronutrients and enhancement techniques (Soil, Cultural and Fertilizer strategies) - Soil health – Quality indices and their management

References

1. **Indian Society** of Soil Science. 2012. Fundamentals of Soil Science. IARI, New Delhi.
2. Yawalkar K.S, Agarwal, T.P and Bokde, S 1995. Manures and Fertilisers. Agril. Publishing House, Nagpur
3. Samuel Tisdale, Nelson Werner L, Beaton James D and Havlin John L. 2005. Soil Fertility and Fertilizers: An Introduction to Nutrient Management, Macmillan Publishing Co., New York.
4. D. K .Das 2014. Introductory Soil Science. Kalyani Publishers, New Delhi

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MANURES, FERTILIZERS AND SOIL FERTILITY MANAGEMENT (PRACTICAL)

1. Introduction to analytical instruments and principles-spectrometry and flame photometry
2. Estimation of available N in soils
3. Estimation of available P in soils
4. Estimation of available K in soils
5. Estimation of available S in soils
6. Estimation of available Ca and Mg in soils
7. Estimation of available Zn in soils
8. Basic of plant analysis and estimation on N in plant samples
9. Estimation of P in plant samples
10. Estimation of K&S in plant samples

A. V. Raman

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AGRICULTURE (Honours)

2025-26 Admitted Batch

Batch 2 Year Semester- III

Courses 7: INTRODUCTION TO ENTOMOLOGY

(CREDITS 3+1=4)

UNIT I

- History of Entomology in India
- Antenna, mouthparts, legs, wings and sense organs

UNIT II

- Anatomy and physiology - digestive, excretory, respiratory, circulatory systems

UNIT III

- Nervous and reproductive systems in insects in brief
- Insect systematics; Distinguishing characters of agriculturally important orders and families of Hexapoda. Characters of Apterygota

UNIT IV

- Exopterygota (Ephemeroptera, Odonata, Orthoptera, Phasmida, Dictyoptera, Embioptera, Dermaptera, Hemiptera, Isoptera, Psocoptera, Mallophaga, Thysanoptera and Siphunculata).

UNIT V

- Taxonomy of Endopterygota - Distinguishing characters of agriculturally important families of Lepidoptera, Coleoptera, Diptera, Hymenoptera, Siphonaptera, Neuroptera and Strepsiptera.

INTRODUCTION TO ENTOMOLOGY (PRACTICAL)

1. Observations on external features of grasshopper / cockroach,
2. Methods of insect collection, preservation – Preparation of Riker mount.
3. Types of insect head, antenna, mouth parts – Structure of thorax.
4. Types of insect legs, wings and their modifications – wing coupling.
5. Structure of abdomen, and its modifications.
6. Metamorphosis in insects – immature stages in insects.
7. Study of digestive and reproductive systems of grasshopper / cockroach
8. Observing the characters of agriculturally important orders and families.

Aravind Kumar

REFERENCES

1. Vasanthraj David. B and Rama murthy VV 2016 Elements of Economic Entomology, popular book depot, Coimbatore
2. Vasanthraj David. B and Ananthakrishnan T.N.2016. General and applied Entomology , Tata McGraw-Hill publishing house, New Delhi.
3. Nair MRGK 1986, Insects and Mites of Crops in India, ICAR, New Delhi.
4. Khare, S.P 1993 Stored Grain Pests and their Management, kalyani publishers, Ludhina

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AGRICULTURE (Honours)

2025-26 Admitted Batch

Batch 2 Year Semester- IV

Courses 8: INTRODUCTION TO PLANT PATHOLOGY

(CREDITS 3+1=4)

UNIT I:

- Fungi: General characters, definition of fungus, somatic structures, 2.2 Types of fungal thalli, fungal tissues, modifications of thallus, 2.3 Reproduction (asexual and sexual)

UNIT II:

- Bacteria – General Characters, Classification of plant pathogenic bacteria Important plant bacterial diseases and their causal agents. Mollicutes: Phyto plasma and Spiroplasma – General characters and important diseases and vectors

UNIT III:

- Fastidious vascular Bacteria – general characters and important diseases and vectors Viruses: General characters of plant viruses, nature, architecture
- Symptoms of various viral diseases, transmission of plant viruses. Important plant viral diseases and their vectors.

UNIT IV:

- Viroids, phanerogamic plant parasites and plant parasitic nematodes, viroids – General characters and important diseases
- Phanerogamic plant parasites – general characters, propagation, survival and their hosts Plant parasitic nematodes–general characters and important plant parasitic nematodes.

UNIT V:

- Survival of Plant Pathogen- Dispersal of Pathogen- Active and Passive- Infection process – pre-penetration, penetration and post-penetration. Defense mechanism in plants – structural, induced defense in plants. Host plant resistance.

INTRODUCTION TO PLANT PATHOLOGY (PRACTICAL)

1. Study of lab equipments.
2. Preparation of PDA (Potato Dextrose Agar).
3. Preparation of NA (Nutrient Agar).
4. General study of different structures of fungi.
5. Study of symptoms of various plant diseases.
6. Staining and identification of plant pathogenic bacteria.
7. Study of phanerogamic parasites.
8. 30 Herbarium.

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REFERENCES

1. Introductory Mycology- 1996 C. J. Alexopoulos C. W. Mims and M. Blackwell, John Wiley and Sons Ltd. N. York.
2. Introduction to Mycology –1990 R. S. Mehrotra and K. R. Aneja, Wiley E. Ltd. New Delhi
3. Plant Pathogens- The Fungi – 1982 R. S. Singh, Oxford and IBH Publishing Co., New Delhi.
4. Introduction to Plant Viruses – 1987 C. L. Mandahar, Chand and Co., Pvt Ltd., New Delhi.
5. Fungicides in Plant disease control – Nene Y L and Thapliyal P N 1993 Oxford & IBM Publishing Co., New Delhi.
6. Introduction to Principles of Plant Pathology – Singh R. S. 1984. Oxford & IBH Publishing Co., New Delhi.
7. Principles of Plant Pathology – Das Gupta M. K. 1999. Allied Publishers, Pvt. Ltd. New Delhi.
8. Plant Pathology. Concepts and Laboratory Exercise. Trigiano, R.N., Windham, M.T. and Windham. A.S. (eds), 2004. CRC Press, New York.

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AGRICULTURE (Honours)

2025-26 Admitted Batch

Batch 2 Year Semester- IV

Courses 9: PESTS OF FIELD CROPS AND THEIR MANAGEMENT (CREDITS 3+1=4)

UNIT: I

- Pests of Cereals and Millets Distribution, bionomics, symptoms of damage and management strategies for insect pests and integrated pest management of rice, wheat, maize and sorghum.

UNIT II

- Pests of Pulses and Oilseeds Distribution, bionomics, symptoms of damage and management strategies of insect pests and integrated pest management of pulses (grams, cowpea.), groundnut, castor, sunflower and mustard.

UNIT III

- Pests of Cotton and Sugarcane Distribution, bionomics, symptoms of damage and management strategies of insect pests and integrated pest management of cotton and sugarcane.

UNIT IV

- Pests of Stored Products, bionomics, symptoms of damage and management strategies.

UNIT V

- Rodents and birds of agricultural importance and their management. Locusts and their management.

PESTS OF FIELD CROPS AND THEIR MANAGEMENT (PRACTICAL)

1. Pests of rice
2. Pests of maize, sorghum
3. Pests of wheat and ragi
4. Pests of grams and cowpea
5. Pests of groundnut, gingelly and sunflower
6. Pests of castor, soybean, safflower and mustard
7. Pests of cotton
8. Pests of sugarcane
9. Pests of stored products
10. Gadgets for management of stored product insects.
11. Calculation on the doses and their application techniques
12. Assessment of losses in stored grain pests, fumigation of grains stored in godowns
13. Visit to nearest FCI/AWC/SWC godown.

AVRamane

Reference Books

1. Vasanthraj David. B and Rama murthy VV 2016 Elements of Economic Entomology, popular book depot, Coimbatore
2. Vasanthraj David. B and Ananthkrishnan T.N.2016. General and applied Entomology, Tata McGraw-Hill publishing house, New Delhi.
3. Nair MRGK 1986, Insects and Mites of Crops in India, ICAR, New Delhi.
4. Khare, S.P 1993 Stored Grain Pests and their Management, kalyani publishers, Ludhina.



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B. VOCATIONAL COURSE AGRICULTURE (Honours)

2025-26 Admitted Batch
Batch 2 Year Semester- IV

Courses 10: DISEASES OF FIELD CROPS AND THEIR MANAGEMENT (CREDITS 3+1=4)

UNIT I

- Principles of plant disease management. Physical methods and biological methods. Protection – Classification of fungicides based on chemical nature and method of application. Integrated disease management.

UNIT II

- Diseases of Cereals, Millets and their Management- Rice, Maize, Sorghum, Bajra and Ragi.

UNIT III

- Diseases of Pulses and oil seeds and their Management- Red Gram, Black Gram and Green Gram Ground nut, Sun Flower and Sesamum.

UNIT IV

- Diseases of Cash crops and vegetable crops and their Management- Cotton, Sugar cane, Brinjal, Chilli, Tomato and Bhendi.

UNIT V

- Diseases of Fruits and their Management- Mango, Papaya, Banana and Citrus

(PRACTICAL)

- Survey and assessment of important plant diseases
- Methods of application of fungicides
- Special methods of application – acid delinting, pseudostem injection, root feeding, pairing and pralinage, trunk injection
- Mass multiplication of Trichoderma spp and method of application
- Identification of Rice and Millets Diseases
- Identification of Diseases on Pulses
- Identification of Diseases on Oil Seeds
- Identification of Diseases on Commercial Crops
- Identification of Diseases on Vegetables
- Identification of Diseases on Fruits

HVK

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REFERENCES:

1. Introductory Mycology- 1996 C. J. Alexopoulos C. W. Mims and M. Blackwell, John Wiley and Sons Ltd. N. York.
2. Introduction to Mycology –1990 R. S. Mehrotra and K. R. Aneja, Wiley E. Ltd. New Delhi
3. Plant Pathogens- The Fungi – 1982 R. S. Singh, Oxford and IBH Publishing Co., New Delhi.
4. Introduction to Plant Viruses – 1987 C. L. Mandahar, Chand and Co., Pvt Ltd., New Delhi.
5. Fungicides in Plant disease control – Nene Y L and Thapliyal P N 1993 Oxford & IBM Publishing Co., New Delhi.
6. Introduction to Principles of Plant Pathology – Singh R. S. 1984. Oxford & IBH Publishing Co., New Delhi.
7. Principles of Plant Pathology – Das Gupta M. K. 1999. Allied Publishers, Pvt. Ltd. New Delhi. 8. Plant Pathology. Concepts and Laboratory Exercise. Trigiano, R.N., Windham, M.T. and Windham. A.S. (eds), 2004. CRC Press, New York.



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