

<b>SEMESTER –I</b>		
<b>Programme/Class – Vocational (B.A./ B.Sc./ B.Com.)</b>		<b>Year: First</b>
<b>Subject: Crop Production Management &amp; Seed Processing</b>		
<b>Course Code: I310101V</b>		<b>Course Title: Introduction of Crop Production</b>
<b>Course outcomes:</b>		
CO 1: To understand advanced concepts of crop growth and productivity in relation to climate change		
CO 2: To gain knowledge on ideal plant ideotypes and yield maximization.		
CO 3: To gain knowledge on principles and components of organic farming		
CO 4: To gain knowledge about soil fertility assessment and methods of fertilizer application		
CO5: The students will be able to demonstrate working principles of protected cultivation.		
<b>Credits: 1+2=3</b>		<b>Core / Elective</b>
<b>Max. Marks: 40(Theory) 60 (Practical)</b>		<b>Min. Passing Marks: 45</b>
<b>Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 1-0-2</b>		
<b>Theory</b>	<ol style="list-style-type: none"> <li>1. <b>Introduction-</b> Basic Principle of Crop Plant, Kharif Crop, Rabi Crop and Management</li> <li>2. <b>Soil and its Component –</b> <ol style="list-style-type: none"> <li>A. Soil Morphological, Physical, Chemical and Biological Properties.</li> <li>B. Acidic, Saline and alkali Soil.</li> </ol> </li> <li>3. <b>Essential Plant Nutrients–</b> Soil Nutrient, Micro Nutrient, Macronutrient Their function and deficiency Symptom.</li> <li>4. <b>Soil Micro-organism –</b> Soil Micro-organics, Rhizosphere and its domain in soil.</li> <li>5. <b>Organic Manure –</b> Soil organic component and Manure, Inorganic fertilization.</li> </ol>	
<b>Practical Activities/ Project/ Assignment</b>	<ol style="list-style-type: none"> <li>1. <b>Study of Soil Profile.</b></li> <li>2. <b>Practical Density.</b></li> <li>3. <b>Bulk Density.</b></li> <li>4. <b>Determination of Soil pH.</b></li> </ol>	
<b>Suggested Readings:</b>		
<ul style="list-style-type: none"> <li>• Text book of crop production Vol. I- ICAR Delhi</li> <li>• Text book of soil science- T.D. Biswas</li> <li>• Fundamentals of soil science- Indian Society of Soil Science.</li> </ul>		
<b>Suggestive Digital Platforms/ Web Links:</b>		
<b>This course can be opted as an elective by the students of following subjects: Open for All</b>		
<b>Continuous Internal Evaluation shall be based on Project/Assignment and Internal class Test. The marks shall be as follows:-</b>		
<b>S. No.</b>	<b>Assessment Type</b>	<b>Max. Marks</b>
1.	Practical Activities /Project/ Assignment	60 Marks
2.	Theory External Examination	40 Marks
<b>Total</b>		<b>100 Marks</b>
<b>Course Prerequisites: 12<sup>th</sup> Pass in Any Stream</b>		
<b>Suggested equivalent online courses:</b>		
<b>Further Suggestions:</b> Workshops and Seminars should be conducted to students		
<b>Any remarks/ suggestions:</b>		

<b>SEMESTER -II</b>		
<b>Programme/Class - Vocational (B.A./ B.Sc./ B.Com.)</b>		<b>Year: First</b>
<b>Subject: Crop Production Management &amp; Seed Processing</b>		
<b>Course Code: I310201V</b>		<b>Course Title: Agronomical Practices</b>
<b>Course outcomes:</b>		
CO 1: To understand advanced concepts of crop growth and productivity in relation to climate change		
CO 2: To acquire knowledge on modern concepts in Crop production.		
CO 3: To understand the knowledge on weed biology and survey of weeds in varied ecosystem.		
CO 4: To identify the nature, type and economic uses of weeds in varied habitat.		
CO 5: To gain knowledge on herbicide application techniques		
CO 6: To evaluate different methods of weed control		
CO 7: To formulate integrated weed management practices for different ecosystems		
CO 8: To understand the principles involved in estimating water requirement for different crops.		
CO 9: To gain knowledge on various methods of irrigation scheduling and approaches.		
<b>Credits: 1+2=3</b>		<b>Core / Elective</b>
<b>Max. Marks: 40(Theory) 60 (Practical)</b>		<b>Min. Passing Marks: 45</b>
<b>Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 1-0-2</b>		
<b>Theory</b>	<ol style="list-style-type: none"> <li><b>1. Introduction-</b> Agriculture and Old &amp; New Practices, Agronomy and its relation with other Sciences.</li> <li><b>2. Classification of Crop</b> – Kharif Crop, Rabi Crop, Tillage and Tillage Practices, Concepts of tillage and Objective.</li> <li><b>3. Seed and Sowing</b> – Seed Characteristics and Different Sowing Method.</li> <li><b>4. Weeds Management</b> – Definition of weed, different from wild, Losses and benefits of weeds, different weed Control Method.</li> <li><b>5. Irrigation</b>– Soil water Classification, Method of Irrigation, approaches for Scheduling irrigation.</li> </ol>	
<b>Practical Activities/ Project/ Assignment</b>	<ol style="list-style-type: none"> <li><b>1. Study of Soil Micro-flora.</b></li> <li><b>2. Practices of Seed bed.</b></li> <li><b>3. Land Measurement.</b></li> </ol>	
<b>Suggested Readings:</b>		
<ul style="list-style-type: none"> <li>• Fundamentals of soil science- R.L. Arya &amp; Khalil Khan</li> <li>• Text book of crop production Vol. II- ICAR Delhi</li> <li>• Text book of soil science- T.D. Biswas</li> <li>• Fundamentals of soil science- Indian Society of Soil Science.</li> </ul>		
<b>Suggestive Digital Platforms/ Web Links:</b>		
<b>This course can be opted as an elective by the students of following subjects: Open for All</b>		
<b>Continuous Internal Evaluation shall be based on Project/Assignment and Internal class Test. The marks shall be as follows:-</b>		
<b>S.No.</b>	<b>Assessment Type</b>	<b>Max. Marks</b>
1.	Practical Activities /Project/ Assignment	60 Marks
2.	Theory External Examination	40 Marks
<b>Total</b>		<b>100 Marks</b>
<b>Course Prerequisites:</b> 12 <sup>th</sup> Pass in Any Stream		
<b>Suggested equivalent online courses:</b>		
<b>Further Suggestions:</b> Workshops and Seminars should be conducted to students		
<b>Any remarks/ suggestions:</b>		

SEMESTER –III		
Programme/Class – Vocational (B.A./ B.Sc./ B.Com.)		Year: Second
Semester: Third		
Subject: Crop Production Management & Seed Processing		
Course Code: I310301V		Course Title: SOIL MANAGEMENT
<b>Course outcomes:</b>		
CO 1: To expand breadth of knowledge and expertise in soil fertility and productivity in crop production.		
CO 2: To develop scientific capability in independently assessing, interpreting, and summarizing soil problems.		
CO 3: To propose, evaluate or execute experimental protocol regarding nutrient budgeting for crop production.		
CO 4: To foster commitment to ethical behavior in fertilization of crops with respect to environment perspectives		
CO 5: To gain knowledge about soil fertility assessment and methods of fertilizer application		
Credits: 1+2=3		Core / Elective
Max. Marks: 40(Theory) 60 (Practical)		Min. Passing Marks: 45
Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 1-0-2		
Theory	<ol style="list-style-type: none"> <li>1. <b>Soil fertility and Productivity</b> – Concept of Essentiality of Plant Nutrient, Fertilizer Manures and Their types.</li> <li>2. <b>Method of fertilizer Application</b> – Type of fertilizer, Application and uses of Different fertilizer.</li> <li>3. <b>Concepts of Crop Rotation</b> – Multiple Cropping and Intercropping their principles, Advantage and Limitation.</li> <li>4. <b>Cropping Intensity</b> – Crop Plan and their intensity in Cropping (Mix Cropping)</li> <li>5. <b>Green Renovation</b>- Impact of green Renovation, wheat Revolution.</li> </ol>	
Practical Activities/ Project/ Assignment	<ol style="list-style-type: none"> <li>1. <b>Seeding Method.</b></li> <li>2. <b>Identification of Crop Seed.</b></li> <li>3. <b>Identification of weed.</b></li> </ol>	
<b>Suggested Readings:</b>		
<ul style="list-style-type: none"> <li>• Field Crop Production- Ministry of Agriculture</li> <li>• Fundamentals of soil science- R.L. Arya &amp; Khalil Khan</li> <li>• Text book of crop production Vol. II- ICAR Delhi</li> <li>• Text book of soil science- T.D. Biswas</li> <li>• Fundamentals of soil science- Indian Society of Soil Science.</li> </ul>		
<b>Suggestive Digital Platforms/ Web Links:</b>		
This course can be opted as an elective by the students of following subjects: Open for All		
Continuous Internal Evaluation shall be based on Project/Assignment and Internal class Test. The marks shall be as follows:-		
S. No.	Assessment Type	Max. Marks
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2.	Theory External Examination	40 Marks
<b>Total</b>		<b>100 Marks</b>
<b>Course Prerequisites:</b> 12 <sup>th</sup> Pass in Any Stream		
<b>Suggested equivalent online courses:</b>		
<b>Further Suggestions:</b> Workshops and Seminars should be conducted to students		
<b>Any remarks/ suggestions:</b>		

<b>SEMESTER –IV</b>		
<b>Programme/Class – Vocational (B.A./ B.Sc./ B.Com.)</b>		<b>Year: Second</b>
<b>Subject: Crop Production Management &amp; Seed Processing</b>		
<b>Course Code: I310401V</b>		<b>Course Title: Seed Processing and Storage Techniques</b>
<b>Course outcomes:</b>		
CO 1. To really understand the basic principles of seed production in varieties and hybrids .		
CO2. To know the concept of and methods of hybrid seed production.		
CO 3. To understand the importance of field standards and seed standards in quality seed production.		
CO 4. To have a faith in seed certification procedure and importance of IMSCS .		
CO 5. To sort out the rogues and off types from the seed production area and to understand the importance of seed testing .		
CO6. Will be in a position to emphasis on Seed Legislation, certification, labelling of different seed classes and truthfully labelled seeds.		
<b>Credits: 1+2=3</b>		<b>Core / Elective</b>
<b>Max. Marks: 40(Theory)</b>		<b>Min. Passing Marks:</b>
<b>60 (Practical)</b>		<b>45</b>
<b>Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 1-0-2</b>		
<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Seed Dormancy, its types and mechanism.</li> <li>2. Principles of seed processing; methods of seed drying.</li> <li>3. <b>Seed treatments-</b> methods of seed treatment, Seed treating formulations and equipments.</li> <li>4. Seed cleaning equipment and their functions.</li> <li>5. <b>Winnowing and Storage-</b> Winnowing of grain seed, Storage and type of storage with relation to the time, moisture and humidity.</li> <li>6. <b>Seed packaging-</b> Principles, practices and materials; bagging and labeling.</li> </ol>	
<b>Practical Activities/ Project/ Assignment</b>	<ol style="list-style-type: none"> <li>1. Operation and handling of mechanical drying equipments</li> <li>2. Operation of seed processing and seed treating equipments</li> <li>3. Seed vigour testing by physical method Viability test-tetrazolium test</li> <li>4. Determination of Seed moisture test and Physical purity analysis</li> <li>5. Visit to the Seed Research farms and Seed Testing Laboratory.</li> <li>6. Visits to Seed processing unit, stores, go downs and seed packing units.</li> </ol>	
<b>Suggested Readings:</b>		
<ul style="list-style-type: none"> <li>• Seed productions of field crops- S. Mandal &amp; Mithun Saha</li> <li>• Agronomy of Field Crop- S.R. Reddy</li> </ul>		
<b>Suggestive Digital Platforms/ Web Links:</b>		
<b>This course can be opted as an elective by the students of following subjects: Open for All</b>		
<b>Continuous Internal Evaluation shall be based on Project/Assignment and Internal class Test. The marks shall be as follows:-</b>		
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<b>Course Prerequisites:</b> 12 <sup>th</sup> Pass in Any Stream		
<b>Suggested equivalent online courses:</b>		
<b>Further Suggestions:</b> Workshops and Seminars should be conducted to students		
<b>Any remarks/ suggestions:</b>		