ST. JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

III SEMESTER  **AGRICULTURE AND RURAL DEVELOPMENT** TIME: 30HRS

AGRO 201(2) **CROP PRODUCTION TECHNOLOGY – I** MARKS:100

w.e.f 2024-2025 (23AK Batch) **SYLLABUS**

**OBJECTIVES:**

* To study about the understand the principles and practices that underpin modern crop practises
* To study about Optimize and manipulate crop scheduling.
* To study Exploit understanding in plant sciences.

**Course Outcomes:**

**CO1:** Explain importance and special features of cereal crops in Andhra Pradesh.

**CO2:** Outline the agronomic conditions for the cultivation of agricultural cereal crops.

**CO3:** Summarize agronomic conditions to grow millet crops.

**CO4:** Discuss the agronomic conditions and characteristics of various agricultural field crops. Necessary for the cultivation of pulses and lentils.

**UNIT – I: (6Hrs)**

1. Cereals – Importance and special features of cereals - Rice- Origin - geographical distribution – nutritional value – area, production and productivity in India and Andhra Pradesh

2. Economic importance - soil and climatic requirements

3. Classification of rice plant types - growth Stages of rice -different types of rice ecosystems

4. Land Preparation –physico – chemical and biological changes under submerged soils

5. Crop establishment techniques in rice - Climate resilient technologies

6. Nutrient management with special emphasis on nitrogen dynamics, micro nutrients -INM

**UNIT – II: (6hrs)**

1. Water management in rice under different rice ecosystems

2. Weed management including weed management in rice nurseries – IWM

3. Harvesting -Yield attributes - yield - post harvest operations - milling of rice

4. Value added products of rice – export potential - rice grain classification, cropping systems in rice

5. Wheat- Origin - geographical distribution - area, production and productivity.

6. Classification and economic importance of wheat, crop growth stages, varieties, Land preparation-seed and sowing -nutrient management, irrigation

7. Harvesting -yield attributes - post harvest operations – storage, crop rotation, mixed cropping, cropping systems, By product utilisation.

**UNIT – III: (6hrs)**

1. Barley – Origin-classification, area-distribution, climate,soil,season, seed rate -spacing, varieties, Nutrient, water, weed management, Harvest details.

2. Maize- Origin- distribution - importance - area, production and productivity in India and Andhra Pradesh- soil, seasons, growth stages, Classification of maize

3. Land Preparation – zero tillage - seeds and sowing - intercultivation, manures and fertilisers, climate resilient technologies.

4. Harvesting - yield attributes – yield - shelling , maize as fodder, value addition.

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5. Millets-importance, climate resilient technologies. constraints and strategies for increasing the production of millets - climate resilient technologies

6. Jowar or sorghum- Origin - importance - area-distribution, adaptations, soils, seasons , majar jowar growing zones, growth stages, seeds-sowing, spacing, Nutrient management, harvesting and threshing, yield attributes, value addition.

**UNIT – IV: (6hrs)**

1. Pearl millet – Origin - distribution - adaptation, soil, land preparation, seasons,seeds, sowing, nutrient management.

2. Harvesting-yield -yield-attributes, cropping systems, varieties.

3. Finger millet- importance, origin, area-production, adaptation, soil, land preparation, season, seeds-sowing, spacing, growth-stages, manures fertilizers, irrigation, harvesting, yield-yield attributes, varieties, cropping systems, value added products of finger millet.

4. Proso millet: origin, area-distribution, cimate requirement, soil, land preparation, seasons,seeds, manures, irrigation, intercultivation, Harvesting, threshing, yield- varieties.

5. Pulses- importance, area-production-productivity, agronomic-genetic-physical constraints, productivity increasing strategies, pulses as climate resilient crops.

7. Redgram- origin, distribution, soils, climate, seasons, seeds-spacing, manures-fertilizers, weed management, harvesting, yield, cropping systems.

**UNIT – V: (6hrs)**

1. Greengram – Origin - distribution - economic importance - soil, climate, land-preparation, varieties, seasons, fertilizers, water-weed management, production constraints, harvesting-threshing,-processing, yield, cropping systems.

2. Blackgram – Origin - distribution, area-production-productivity, importance, soil-climatic requirements, varieties, constraints, seeds-spacing, fertiliser application, irrigation, weed management, harvesting- threshing, yield, cropping systems.

3. Bengalgram - Origin - economic importance, area-production-productivity, soil, climate, varieties, seeds-sowing, fertilizers, irrigation, weed control, harvesting, threshing, cropping systems, intercropping.

4. peas: origin, distribution, soil- climate, season-varieties, seed rate, spacing, weed management, cropping systems, yield, types,Economic uses of peas.

Lentil: origin, distribution, classification, soil-climate, varieties, land preparation, seed rate and sowing, method of sowing, water and nutrient, weed management, harvesting, yield , Economic uses of lentil.

5. Horsegram- origin, area-production-productivity, soil,climate,spacing, fertilizers, irrigations, weed control, cropping system, harvesting and storages, constraints , importance.

6. Cowpea- Origin, area-production, soil-climate, varieties, seed rate- spacing, growth -stages, fertilisers- biofertilizers, water-weed management, cropping systems, harvesting, and post-harvest care, yield.

**REFERENCES TEXT BOOKS:**

1. Rajendra Prasad. 2006. Text book of field crops production. ICAR, New Delhi.
2. Reddy, S.R. and Reddi Ramu. 5th edition. 2016. Agronomy of field crops. Kalyani publishers, Ludhiana.
3. Gururaj hunsigi and Krishna, K.R. 2007. Scientific field crop production. Oxford &IBH Publishing Co.Pvt.LTD.
4. De Datta, S.K.1981. Principles and practices of rice Production. John Wiley and Sons, New York. \*\* \*\* \*\*