


SATAVAHANA UNIVERSITY, KARIMNAGAR
The combination of the course is Botany, Chemistry, and Agriculture
AGRICULTURE COURSE STRUCTURE w.e.f from 2023-24

CODE	PAPER TITLE	Course Type	HPW	Credits
FIRSTYEAR SEMESTER - I				
AG 104	PAPER-I: Crop Production -Principles and Practices	DSC-1A	4T+2P=6	4+1=5
FIRST YEAR SEMESTER - II				
AG 204	PAPER-II: Production technology of major Agricultural and Horticultural crops	DSC-1B	4T+2P=6	4+1=5
SECOND YEAR SEMESTER - III				
301	SEC-1:	SEC-1	2	2
302	SEC-2:	SEC-2	2	2
AG 304	II: Crop Improvement-Plant breeding and Agricultural Biotechnology	DSC-1C	4T+2P=6	4+1=5
SECOND YEAR SEMESTER - IV				
401	SEC-3:	SEC-3	2	2
402	SEC-4:	SEC-4	2	2
AG 404	PAPER-IV: Crop Protection I-Entomology	DSC-1D	4T+2P=6	4+1=5
THIRD YEAR SEMESTER - V				
501	GE-1:	GE-1	4T	4
AG 502	PAPER-V: Crop Protection II - Plant Pathology	DSC-1E	4T+2P=6	4+1=5
THIRD YEAR SEMESTER - VI				
AG 601	PAPER-VI: Agricultural Economics and Extension Education	DSC-1F	4T+2P=6	4+1=5
Theory: University Exam: 80 marks + internal:20 Marks = 80+20 = 100 = 4 credits Practical: 25 marks = 1 credit				


Director
Academic Audit Cell
 Satavahana University, Karimnagar

SATAVAHANA UNIVERSITY
Department of Agriculture

COURSE NAME	B.SC (Botany, Chemistry, Agriculture)	SUBJECT NAME: Agriculture		Max. Marks	80
Semester	I	TITLE	Crop Production - Principles and Practices	No. of Credits	04

UNIT – I

Definition of Agriculture-Meaning and Scope of Agronomy. Agro climatic zones of India- Soils, land use pattern, major sources of irrigation and ground water potential. Agro climatic zones of Telangana- Soils, land use pattern, major sources of irrigation and ground water potential. Tillage and tilth- Objectives of tillage- characteristic of ideal seed bed- Effect of tillage on soil properties- pore space, structure bulk density, particle density and colour of the soil. Types of tillage-preparatory tillage- factors effecting preparatory cultivation, after cultivation, puddling.

UNIT – II


Crop Stand establishment-Factors effecting optimum stand establishment-Study of seeding equipment & different methods of sowing in the field -Crop density-Planting geometry- Competition-Types of competition, intra and inter plant competition- Plant population-effect of plant population on growth and yield-Optimum plant density and planting pattern-Growth and development of crops-factors effecting growth and development-Weed Control-Definition of weed-losses and uses of weeds-weed influence on crop production-methods of weed control-Definition and principles of crop rotation-cropping systems- mixed, inter, relay, ratoon, sequence and multi stored cropping-sole cropping-Definition and Objectives of silviculture-Parts and stages of development of a tree, plantation life history of tree cultivation-Agroforestry-definitions-importance-criteria of selection of trees in agroforestry

UNIT – III

Soil fertility- soil fertility and soil productivity-fertility losses- maintenance of soil fertility-soil organic matter-uses of organic matter -Crop nutrition-Essential elements-Importance of major, secondary and micronutrients- Manures and fertilizers- Classification- Nutrient content- Nutrient use efficiency-Factors effecting nutrient use efficiency-Soil classification- maintenance of soil productivity, water management- water harvesting-storage-distribution and relevance to modern agriculture-Quality of irrigation water-Salinity hazard, Sodcity hazard, Residual sodium carbonate and Boron toxicity-Criteria and threshold limits- Management practices for using poor quality water.

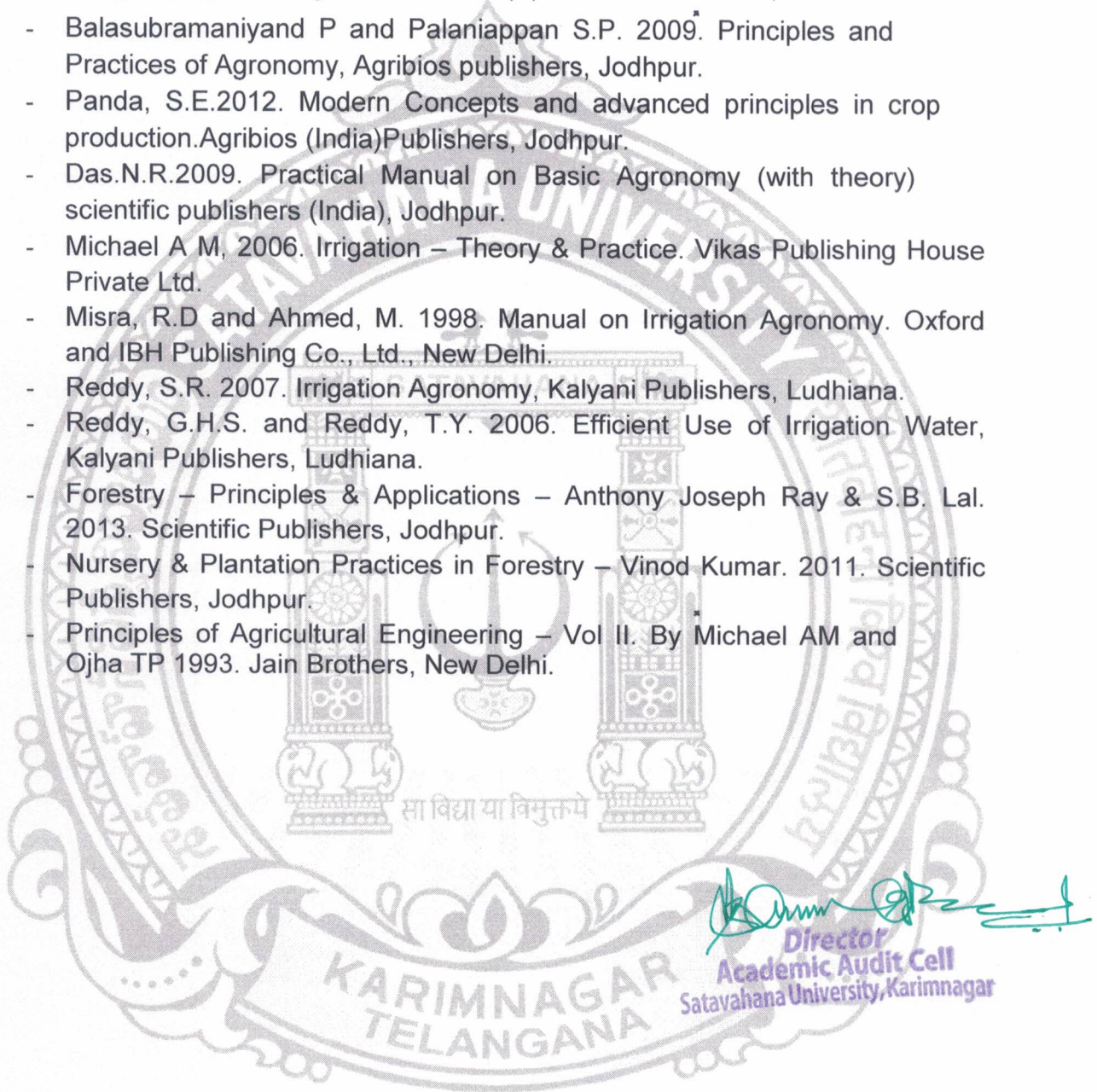
UNIT – IV

Soil-water relations - Physical properties of soil- Effective root zone depth - Moisture extraction pattern - Moisture sensitive periods of important crops - Irrigation management - importance of irrigation-Objectives of irrigation-methods of irrigation- drainage and its advantage-Kinds of water in soil - Gravitational Water - Capillary water - Hygroscopic water- Soil moisture constants - Saturation capacity - Field capacity-Permanent wilting point-Available soil moisture - Hygroscopic coefficient-Surface irrigation methods - Wild flooding, Check basin, Ring basin, Border strip, Furrow & Corrugations-Advantages and disadvantages-Water use efficiency (WUE)-Crop water use and Field water use efficiency - factors influencing WUE-Micro irrigation-Sprinkler, drip irrigation method - Definition - Advantages & disadvantages-Fertigation-Principle and scheduling in drip irrigation method. recommended water soluble fertilizers


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Reference Books

- Yellamanda Reddy.T & Sankara Reddi. G.H. 2010. Principles of Agronomy, Kalyani Publishers, Ludhiana.
- S.R.Reddy, 2000. Principles of Agronomy, Kalyani Publishers, Ludhiana.
- B. Chandrasekharan, K. Annadurai, E.Somasundaram. 2014. Text book of Agronomy, New age international (P) Limited Publishers, Delhi.
- Balasubramaniyand P and Palaniappan S.P. 2009. Principles and Practices of Agronomy, Agribios publishers, Jodhpur.
- Panda, S.E.2012. Modern Concepts and advanced principles in crop production.Agribios (India)Publishers, Jodhpur.
- Das.N.R.2009. Practical Manual on Basic Agronomy (with theory) scientific publishers (India), Jodhpur.
- Michael A M, 2006. Irrigation – Theory & Practice. Vikas Publishing House Private Ltd.
- Misra, R.D and Ahmed, M. 1998. Manual on Irrigation Agronomy. Oxford and IBH Publishing Co., Ltd., New Delhi.
- Reddy, S.R. 2007. Irrigation Agronomy, Kalyani Publishers, Ludhiana.
- Reddy, G.H.S. and Reddy, T.Y. 2006. Efficient Use of Irrigation Water, Kalyani Publishers, Ludhiana.
- Forestry – Principles & Applications – Anthony Joseph Ray & S.B. Lal. 2013. Scientific Publishers, Jodhpur.
- Nursery & Plantation Practices in Forestry – Vinod Kumar. 2011. Scientific Publishers, Jodhpur.
- Principles of Agricultural Engineering – Vol II. By Michael AM and Ojha TP 1993. Jain Brothers, New Delhi.



SATAVAHANA UNIVERSITY
Department of Agriculture

COURSE NAME	B.SC (Botany, Chemistry, Agriculture)	SUBJECT NAME: Agriculture		Marks	25
Semester	I	TITLE	Crop Production - Principles and Practices	No. of Credits	01

Practical's:

1. Study of different tillage implements.
2. Study of different sowing operations in the field.
3. Identification of different tractor and bullock drawn implements.
4. Visit to puddling operations in agricultural fields and practical significance.
5. Different Fertilizer application methods.
6. Spray application of agro-chemicals in the field – methodology and practice.
7. Identification of different fertilizers and dosage calculations at field level.
8. Computation of seed rate and spacing of different crops.
9. Identification of different weed species in the field and their mode of propagation.
10. Visit to agro-forestry plantations and forest nursery.
11. Calculation of gravimetric and volumetric soil moisture percentage.
12. Computation of FC, PWP and available water in the soil.
13. Different types of soil structure and texture and soil profile studies.
14. Field visit to drip irrigated fields.
15. Visit to water harvesting structures like farm pond.


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