GANPAT UNIVERSITY									
FACULTY OF AGRICULTURE, ALLIED SCIENCES &AND TECHNOLOGY									
Programme	B.Sc. (Hons) Agriculture					Branch/Spec.	Agriculture		
Semester	I					Version	2.1.1.0		
Effective from Academic Year		2025-26				Effective for the batch Admitted In			July 2025
Subject code	2IA06FAG		Subject Name			**Fundamentals of Agronomy**			
Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture (DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	0	1	-	3	Theory	40	40	80
Hours	2	0	2	-	4	Practical	20	00	20

Objectives of the course:

To acquaint the students with the basic concepts of Agronomy and their application in agriculture.

CO-1. To learn fundamentals of agronomy.

CO-2. To study the various nutrients with function and classification.

CO-3. To study the different types of organic and inorganic fertilizer with classification and Integrated Nutrient Management

CO-4: To study the irrigation requirement, its quality and methods

CO-5. To understand the role of weeds on crop production, its classification and various methods of weedcontrol.

CO-6: To learn the crops on field and practices various methods on farm.

Theory Syllabus

Unit	Content	Hrs
1	Agronomy and its scope, art, science and business of crop production, relation of Agronomy with other disciplines of Agricultural Science, fields crops and classification, importance, ecology and ecosystem, seeds and sowing, Factors affecting crop stands establishment: good quality seed, proper tillage, time of sowing seed rate, depth and method of sowing: broadcasting, drilling, dibbling, transplanting etc, Tillage and tilth: Definition, objectives, types, advantages and disadvantages of tillage including conservation tillage. Crop density and geometry: plant geometry and planting geometry, its effect on growth, yield.	7
2	Crop nutrition: Definition of essential nutrients, criteria of essentiality, functional elements, classification of essential nutrients, role of macro and micro nutrients. Nutrient absorption, active and passive absorption of nutrients, forms of plant nutrients absorbed by plants, Combined /uncombined forms.	4
3	Manures and fertilizers, nutrient use efficiency: Sources of nutrients: Inorganic (fertilizers), organic (manures) and bio-fertilizers; their classification and characteristics, method of preparation and role of organic manures in crop production. Integrated Nutrient Management (INM): Meaning, different approaches and advantages of INM. Green manure- role in crop production: Definition, objectives types of green manuring, desirable characteristics, advantages and limitations of green manuring	8
4	Water resources, soil-plant-water relationship, crop water requirement, water use efficiency, irrigation- scheduling criteria and methods, quality of irrigation water, logging.	4

5	Weeds- importance, classification, crop weed competition, concepts of weed management principles and methods, herbicides- classification, selectivity and resistance, allelopathy. Agro-climatic zones of India and the state, cropping systems: Factors affecting cropping systems, major cropping patterns and systems in the country. Sustainable crop production: Definition, importance and practices, natural resources and conservation pollution and pollutants, Allelopathy: Meaning and importance in crop production, Growth and development of crops: Definition, Meaning and factors affecting growth and development	7

Practical Content

1. visit to Instructional Crop farm and study on field crops.
2. Identification of crops, seeds, fertilizers, pesticides
3. Crops and cropping systems in different Agro-climatic zones of the state
4. Study of some preparatory tillage implements,
5. Study of inter tillage implements,
6. Practice of ploughing / puddling,
7. Study and practice of inter cultivation in field crops,
8. Numerical exercises on calculation of seed, plant population and fertilizer requirement,
9. Study of yield contributing characters and yield estimation of crops,
10. Identification of weeds in different crops, Seed germination and viability test of seed,
11. Practice on time and method of application of manures and fertilizers.

Reference book

1. Rao V S. 1992. Principles of Weed Science. Oxford and IBH Publishing Co. Ltd. New Delhi.
2. Reddy Yellamanda T and Shankar Reddy G H. 1995. Principles of Agronomy. Kalyani Publishers, Ludhiana.
3. Reddy, S. R. 2008. Principle of Crop Production, Kalyani Publisher, Ludhiana.
4. William L Donn. 1965. Meteorology. McGraw-Hill Book Co. New York.
5. Yawalkar K S and Agarwal J P. 1977. Manures and Fertilizers. Agricultural Horticultural Publishing House, Nagpur.