

M. Sc. (Ag.) Agronomy

Semester I

Sr. No.	Course Code	Course Title	Credit hrs.
1.	AGRN. 702	Crop Physiology	3(2-0-2)
2.	AGRN.728	Weed Control in field crops	3(2-0-2)
3.	MAS 711	Statistics	3(2-0-2)
4.	COMP 705	Computer Orientation	3(2-0-2)
Total Credits			12

Semester II

Sr. No.	Course Code	Course Title	Credit hrs.
1.	AGRN. 701	Principles of Crop Production	3(2-0-2)
2.	AGRN. 703	Cereal Crops	3(2-0-2)
3.	AGRN. 704	Pulses and Oilseeds	3(2-0-2)
4.	AGRN. 724	Soil fertility & Fertilizer Management	3(2-0-2)
5.	MAS 712	Statistics	3(2-0-2)
Total Credits			15

Semester III

Sr. No.	Course Code	Course Title	Credit hrs.
1.	AGRN. 718	Dryland Agriculture	3(2-0-2)
2.	AGRN. 726	Weed control methods	3(2-0-2)
3.	AGRN. 801	Commercial crops	3(2-0-2)
Total Credits			09

Semester IV

Sr. No.	Course Code	Course Title	Credit hrs.
1.	AGRN. 824	Seminar	1(0-0-2)
2.	AGRN. 820	Dissertation	15(0-0-30)
Total Credits			16

DEPARTMENT OF AGRONOMY: (All branch)

AGRN 702

Crop Physiology

3(2-0-2)

Crop Physiology, its importance and scope. Components of agricultural production system. Environment, germination, seedling emergence vegetative growth, flowering and fruit growth; root system, root-shoot relationship, root growth response to factors of soil environment, overall growth and its modification; the soil root interface in the rhizosphere absorption and transport of water and mineral nutrients. Crop productivity maximization and factors limiting the maximum production, drought, frost and salinity resistance of crop plants, crop produce quality and factors affecting crop quality. Photosynthesis, transpiration and respiration in relation to dry matter production.

Practical:

Chlorophyll estimation. Oil estimation Soxhlet's method. Amino-acid determination. Growth analysis of major crops. Leaf-area index determination. Study of physiological growth stages in crops. Bio-mass study of major crops. Study of plant behaviour in sole cropping, mixed cropping and inter-cropping systems.

AGRN 701

Principles of Crop Production

3 (2-0-2)

Scientific principles of crop production, concept of crop rotation and cropping schemes/systems under varied conditions; concept of zero tillage, multiple cropping, agro-forestry and diara land management. Farming systems in relation to sustainable productivity basis. Mixed and inter-cropping systems and their mutual relationships on crop productivity. Research needs of cropping systems.

Practical:

Evaluation of mixed or inter-cropping systems – Aggressivity value, competition coefficient, composition index, land equivalent ratio, radiation requirement, relative crowding coefficient. Formulation of cropping schemes & calculation of cropping/rotational intensity. Studies of economics of cropping system & input/output ratio. Evaluation of land use and productivity of high intensity cropping – multiple

Practical:

Study of field operations for raising above crops. Crop growth & development phases, identification of crops, preparation of cultural and manorial schedule for above crops. Judging crop, maturity and yield estimation. Visit to research farms.

AGRN 718**Dryland Agriculture****3 (2-0-2)**

Dry farming – characteristics and problems, principal dry farming zones of the country. Drought-classification, causes of death of plants under drought, drought resistance – mechanism of drought resistance in plants, escaping drought, classification of plants according to their drought resistance, researches in dry farming for boosting crop yields. Agro-techniques for raising dry land crops.

Practical:

Study of water/moisture harvesting techniques. Testing of crops and their varieties for drought tolerance. Study of morphological changes in crop plants grown under dry lands. Root/shoot ratio. Fertility ratio. Harvest index. Use of chemicals to induce drought tolerance and to study their performance.

AGRN 724**Soil Fertility & Fertilizer Management****3(2-0-2)**

Soil fertility and productivity; soil composition in relation to crop production – organic and inorganic constituent; essential plant nutrients; deficiency and toxic symptoms of major and micronutrients and remedial measures; transformation and dynamics of major plant nutrientfgvb54s; kinds of fertilizers – straight, complex and bulk blended ; methods of fertilizer application; crop response to nutrients; fertilizer use efficiency, agronomic chemical and physiological; methods of increasing fertilizer use efficiency; nutrient interactions; fertilizer application in cropping systems – direct, residual and cumulative effects; integrated plant nutrient supply systems – organic manures, compost, green manures, vermi-compost, bio-fertilizers, crop residue and inorganic fertilizers;

sustainable agriculture and soil fertility; fertilizers and environment; fertilizer use in problem soils; soil moisture-nutrients interactions.

Practical:

Determination of soil Ph, organic C, total N, available N, P, K ands in soils; interpretation of interaction effect and composition of economic and yield optima.

AGRN 726 Weed Control Methods 3(2-0-2)

Weed Control – Concept, control, various eradication methods – mechanical and cultural methods of control; biological and chemical methods – advantage and limitations of each methods; integrated weed control methods.

Practical:

Field trials on manual methods versus mechanical methods; Chemical methods versus mechanical methods; Integration of different combinations of chemical, mechanical and manual methods and comparison with traditional methods.

AGRN 728 Weed Control in field crops 3 (2-0-2)

Weed control in cultivated crops – Cereals (rice, wheat, barley, oats, maize); Millets (sorghum, pearl millet, finger millet), Oilseeds (groundnut, mustard, sunflower, soybean, safflower, sesamum, linseed), Pulse crops (chickpea, pigeonpea, greengram, blackgram, lentil), tuber crops (potato, sweetpotato), Fibre crops (cotton, jute), Other field crops (Tobacco, Sugarcane, Sugarbeet).

Practical :

Field trial on important cereal crops, millet crops, pulse crops, oilseed crops, tuber crops, fibre crops and other crops.

AGRN 824 Seminar 1 (1-0-0)

AGRN 820 Thesis / Research 15 (0-0-30)