

## **COURSES OUTCOMES- DEPARTMENT OF AGRONOMY**

The department of Agronomy is a post graduate department. Following under graduate and post graduate courses are being taught in the department;

### **LIST OF UNDER GRADUATE COURSES**

<b>Name of semester</b>	<b>Sl. No.</b>	<b>Course title</b>	<b>Course code</b>	<b>Course credit hours</b>
<b>B. Sc. Ag I Semester</b>	1	Principles of Agronomy	D-191	2-0-1
	2	Agricultural Meteorology	D-195	2-0-1
<b>B. Sc. Ag II Semester</b>	1	Irrigation and Water Management	D-291	2-0-1
<b>B. Sc. Ag III Semester</b>	1	Cereals Millets and Pulses Crops	D-391	2-0-1
	2	Environmental Science and Agro-ecology	D-394	2-0-1
<b>B. Sc. Ag IV Semester</b>	1	Oil seed, Commercial Crops and Field Crops	D-491	2-0-1
	2	Principle of Soil Physics and Conservation	D-493	2-0-1
<b>B. Sc. Ag V Semester</b>	1	Weed Management	D-495	1-0-1
<b>B. Sc. Ag VI Semester</b>	1	Farming Systems and Sustainable Agriculture	D-694	2-0-1
<b>B. Sc. Ag VII Semester</b>	1	Rainfed Farming	D-791	2-0-1
	2	Agroforestry and Silviculture	D-792	2-0-1
<b>B. Sc. Ag VIII Semester</b>	1	Rural Agricultural Works Experience in Soil and Water Conservation	D-891 (h)	0-0-2
	2	Rural Agricultural Works Experience in Crop Production	D-891 (i)	0-0-2

## **Course outcome of under graduate courses department of Agronomy**

**Course Title : Principles of Agronomy**

**Code : D-191**

**Class : B. Sc. Ag I Sem.**

**Course credit : 2-0-1**

**Course outcome:**

1. Students develop a general understanding about Agriculture and Agronomy and also to relate different branches of Agriculture.
2. Helps students in understanding of different traditional as well as moderns Agronomic techniques and their scientific relevance.
3. Develops an understanding about essential plants nutrients their metabolic roles in plants their specific deficiency symptoms and strategies to maintain soil fertility for higher and sustained productivity.
4. Helps the students to develop a basic understanding about efficient utilization of our scarce water resources. So as to maintain its availability as well as usability for our future generation to come.
5. Familiarise the students in understanding role of different climatic, biotic & management factors on the plant growth developments, yield and nutritional quality.
6. Creates practical ability among students for identification of different weeds, manure, fertilizers and Agrichemicals.
7. Computation of input requirements (manures, fertilizers, seeds, weedicide etc) for given areas.
8. Yield and expected profit estimation with the help of post harvest data form large areas.

**Course Title : Agricultural Meteorology**

**Code : D-195**

**Class : B. Sc. Ag I Sem.**

**Course credit : 2-0-1**

**Course outcome:**

1. To understand the weather and climate and its components with special reference to Agriculture.
2. To understands the effects of different climate and weather extremes frost. drought, cyclone hailstorm etc on crop production and agri-entrepreneurs.
3. Helps in developing scientific understanding about different weather events and their possibilities of occurrence and intermittent managements strategies to escape from their losses.
4. Familiarise about short term, midterm and long term weather forecast for proper management of agri-entrepreneurs

5. Helps in developing ability among students in deciding climate specific crops and agri-entrepreneurs.
6. Provides an understanding about general layout of meteorological observatory.
7. A practical understanding about physical principals involved in working of different meteorological observatory equipments.
8. Estimation of rainfall and runoff from given area.
9. Helps in developing an “understanding and interpretation about different weather events to come with the help of temperature, relative humidity and wind speed parameters.

**Course Title : Irrigation and Water Management**

**Code : D-291**

**Class : B. Sc. Ag II Sem.**

**Course credit : 2-0-1**

**Course outcome**

1. Provides basic idea about water resources of India and Indian states.
2. Helps the students to understand behaviour of water in soil, plant and atmosphere system( SPAC system).
3. Develops skill among students in designing of situation specific irrigation methods and modules.
4. Helpful in developing understanding for answer of three basic questions when to irrigate? how to irrigate? and how much to irrigate.
5. Help full in dissipating understanding about care and maintenance of irrigation resources as a planner and canal distributaries and field channels as an user.
6. To develop understanding regarding causes of poor efficiency of mega and minor irrigation projects.
7. To develop understanding about necessity of drainage for harnessing efficiency of irrigation projects and elimination of several soil problems.
8. Develops practical approach among students for measurement of water content in soil system.
9. Helpful in developing idea about quantity of water needed for a particular crop in a single irrigation as well as during entire crop period
10. Helpful in developing skill among students regarding designing and demonstration of irrigation methods at farm level.
11. Practical idea regarding quantification of discharge and delivery of water from different water sources and calculation of duty of water.

**Course Title : Cereals Millets and Pulses Crops.**

**Code : D-391**

**Class : B. Sc. Ag III Sem.**

**Course credit : 2-0-1**

**Course outcome**

1. For developing understanding regarding area , distribution and geography of *Kharif* crops in Indian states and India in particular and ranking of India in world in general.
2. For creating specific awareness among students regarding climatic and edaphic requirements of crops and their cultivars.
3. Helpful in creating ability among students for realising /understanding agronomic and socioeconomic constraints in the production of *Kharif* crops and developing strategies to overcome various crop specific constraints.
4. To familiarize students regarding scientific production techniques of *Kharif* crops for achieve higher quantity and quality of produce.
5. Helps the students in providing comprehensive knowledge regarding diagnosis /identification of crop disease, harmful insect pests and weeds and developing appropriate management strategies.
6. Practical awareness about weeds found in different *Kharif* crops.
7. Familiarize the students about the field symptoms of disease of *Kharif* crops.
8. To develop practical approach in identification of harmful *Kharif* crops insect pests.
9. Helps in developing ability among students about calculation of seed, weedicide, insecticide, requirement for given areas.
10. Helps in developing ability for macro crops related survey regarding area, production, productivity with the help of post harvest data.

**Course Title : Environmental Science and Agroecology**

**Code : D-394**

**Class : B. Sc. Ag III Sem.**

**Course credit : 2-0-1**

**Course outcome**

1. To gain in-depth knowledge among students on natural processes involved in our environment that sustain life and economy.
2. To develop an understanding about consequences of faulty human activities on the environment and web of life, economy and quality of human life.
3. To familiarize the students about succession and adoption of different crop species under different agro ecological situations.
4. Helps in acquiring values and attitude towards understanding environmental socioeconomic changes and participation actively in solving environmental problems for the benefit of our as well as future generations to come.

5. To make the students capable to understand situation specific crop production related environmental issues and to develop core strategies.
6. Practical understanding about different ecosystems and their components.
7. Familiarise the students about lithospheric and water pollution in particular and creates ability for appropriate means to handle the problem.
8. Help the students in developing techniques about studying succession of weed, and crop species in different agro environmental situations.
9. Helps in developing soil and water pollution controlling modules at farm as well as at community level.
10. Develops ability in the quantification of pollutants presence in the system.

**Course Title : Oil Seed and Commercial Crops (*Rabi* Crops)**

**Code : D-491**

**Class : B. Sc. Ag IV Sem.**

**Course credit : 2-0-1**

**Course outcome**

1. For developing comprehensive understanding regarding area distribution and geography of *Rabi* crops among Indian states and India in particular and world in general.
2. For creating specific awareness among students about climatic and edaphic requirements of *Rabi* crops and their cultivars.
3. Helpful in creating ability to understand different agronomic and socioeconomic constraints in the production of different *Rabi* crops and developing core strategies to overcome various crop specific problems.
4. To familiarize the students regarding scientific production techniques of *Rabi* crops for achieving higher quantity and quality of produce.
5. Help the students in gaining comprehensive knowledge regarding diagnosis/identification of *Rabi* crop diseases harmful insects and weeds and developing appropriate management strategies to control them.
6. Creates practical awareness about prevalence of weeds in different *Rabi* crops.
7. Familiarize the students about visible field symptoms for the diseases of *Rabi* crops.
8. To develop practical approach in identification of harmful *Rabi* crop insects.
9. Helpful in developing skill among students about calculation of seeds, weedicide, insecticide *etc.* requirement for given practical situations.
10. Helps in developing ability of macro crop related survey and database generation regarding area, production and productivity of crops.

**Course Title : Principles of Soil Physics and Conservation**

**Code : D-493**

**Class : B. Sc. Ag IV Sem.**

**Course credit : 2-0-1**

**Course outcome**

1. Develops capacity to understand the forces responsible for weathering and soil formation and its significance for maintenance of life forms on the planet.

2. Helps the students to learn about basic physico-chemical phenomena/processes governing soil fertility and productivity
3. Familiarise the knowledge regarding soil flora and fauna and their role in maintaining hospitability of soil environment for crop plants.
4. Helpful in developing ability among students in understanding transformation of different nutrient elements and the factors affecting these transformations.
5. Familiarise knowledge regarding different forms of soil erosion, factors affecting erosions and strategies to control different forms of soil erosion.
6. Develops practical ability among students in quantification of soil and water loss from an area.
7. Helps in designing and development of soil and water conservation structures and their management.
8. Helpful in acquiring understanding about use of soil survey equipments for efficient land use and planning.
9. Helpful in creating practical ability among students regarding diagnosis of soil problems and developing situation specific plan for their reclamation.
10. Provides opportunity to the students to learn different scientific approaches of soil quality enhancement through visit to different research stations of national repute.

**Course Title : Weed Management**

**Code : D-595**

**Class : B. Sc. Ag V Sem.**

**Course credit : 2-0-1**

**Course outcome**

1. Students would able to identify weed species and understand their biological behaviour in reference to crop weed competition.
2. Familiarise the knowledge regarding control and management of weeds on crop lands as well as urban and industrial land scapes.
3. Creates ability among students in designing and development of cost and environment friendly integrated approach for weed management under different crops.
4. To develop skill in students pertaining to scientific approach for evolution and evaluation of chemical weedicides for given set of crop and crop environment.
5. Also enables the students to understand the expected future challenges regarding weed control and management.
6. Helps in practical screening of season and crop wise weed flora.
7. Inculcate practical understanding regarding different weedicidal application equipments, their care and maintenance.
8. To create practical ability in quantification of herbicidal dose for given set of weed control situations.
9. Helps in developing practical skill among students for studding extent of yield loss due to weeds.

10. Develops practical and scientific ability in designing of techniques for estimation of effectiveness of weed control treatments

**Course Title : Farming Systems and Sustainable Agriculture**

**Code : D-694**

**Class : B. Sc. Ag VI Sem.**

**Course credit : 2-0-1**

**Course outcome**

1. To familiarise the knowledge in students regarding future format of Agriculture in India and world.
2. To make students familiar about ill consequences of faulty agricultural practices performed during recent pasts and to develop ability to overcome them.
3. To develop a sense and attitude of sustainability among students mind set for achieving food, environment, employment, nutritional and resource security.
4. To develop a comprehensive understanding about agriculture and its allied entrepreneurs as a whole.
5. To create an ability of designing and development of situation specific agri-entrepreneur combination to overcome soil complications, improve farm and national income and to increase employment opportunities.
6. Helps in developing practical understanding regarding socio-economic and climatic factors governing adoption of agri-entrepreneur and a farming system model.
7. To develop an ability among students about to study the practical and economic feasibility of different agri entrepreneurs in an area.
8. To develop evaluation criteria and parameters for economic comparison of different agri-entrepreneur modules.
9. Helpful in practical designing and evaluation of farming system modules for a given set of agro-ecological situation.

**Course Title : Rainfed Agriculture**

**Code : D-791**

**Class : B. Sc. Ag VII Sem.**

**Course credit : 2-0-1**

**Course outcome**

1. The course provides basic idea about trend of land use pattern in the country.
2. Provides knowledge regarding limited availability of irrigation water in India and Indian states and helps in developing an ultimate sense to save water to meet our demand as well as demand of our future generations to come.
3. Familiarise the students about to understand different crop related constraints under dryland, water logged and rain fed situations.
4. Helps in developing situation specific crop management strategies to meet nation's goal of food security and resource sustainability.

5. To develop capability among students for evolution and adoption of contingent crop plans against extremes of weather.
6. Envisages the sense and tendency of watershed based approach among students to cope the problems of soil and water conservation, efficient marketing and rationalized resource utilization.
7. Helps in practical understanding about constraints in crop production observed under drought and water logging prone areas.
8. To develop practical ability for quantification of soil loos, soil moisture retention and determination of bulk and particle density in the soils.
9. Practical development and demonstration of soil and water conservation structures, their maintenance and estimation of construction cost.
10. Creates practical ability among students to determine critical growth stages of crops and the extent of yield loss and gain under shortage of irrigation.

**Course Title : Silviculture and Agro-Forestry**

**Code : D-792**

**Class : B. Sc. Ag VII Sem.**

**Course credit : 2-0-1**

**Course outcome**

1. Emphasizes the importance of trees and forestry in meeting farm family multiple needs and conservation and restoration of soils and environment.
2. Familiarises knowledge regarding raising forest nursery, its maintenance and plantation techniques of forests on farm boundaries and social sites.
3. Helps to develop a sense focusing importance of trees described through a sloke in *Rigveda*  

**“ Dus Kup sama Wapi, dus Wapi sama Hadah ,  
Dus Had Vanshputro, Vansputra sama Taruh” .**
4. Helps in developing ability to identify appropriate agroforestry trees under different agro ecological situations.
5. Provides basic understanding regarding rejuvenation of natural forests and rationalized delivery and discharge of services from forests to meet our as well as our future generation’s needs.
6. Develops self reliance of entrepreneurship among students through adoption of forest nursery raising and agro-forestry.
7. Practical identification of agroforestry trees and study of their biological behaviour.
8. Creates ability among students for economic analysis and comparison of agro-forestry systems with existing farming systems.
9. Helpful in developing practical skill of cutting, grafting, layering for maintenance and development of desired tree characters.



**Course Title : Rural Agricultural Works Experience in Soil And Water Conservation**  
**Code : D-891(h)**  
**Class : B. Sc. Ag VIII Sem.**  
**Course credit : 0-0-2**

**Course outcome**

1. The course provides an opportunity to the students to understanding the rural society in perspective of agriculture and allied activities.
2. Makes the students familiar with socio economic condition and function of farmer and its community.
3. Helps the students to impart the practical knowledge of different irrigation, soil conservation and reclamation operations performed by different farmers.
4. Provides opportunity for the field visit to understand the farmer problems related to declining ground water and gradual loss in soil fertility in reference to crop production and develop strategies for their improvement.
5. Develops confidence and competence among the students in solving agricultural problems.

**Course Title : Rural Agricultural Works Experience in Crop Production**  
**Code : D-891(i)**  
**Class : B. Sc. Ag VIII Sem.**  
**Course credit : 0-0-2**

**Course outcome**

1. Helps to understand and quantify the constraints in production of different crop in the college nearby area and also farmer's ongoing efforts and strategic developments required.
2. Makes the students capable to diagnose on farm visible nutrient deficiency symptoms, disease systems, insect infestation and creates ability to manage the problems.
3. Develops communication skill among students in teaching and research using traditional and modern extension tools.
4. Provides opportunity of team work to solve the agricultural problems related to crop production.
5. Develops practical ability in students to understand market related functioning, their lacunas and government and institution supports required.