

**NEW SYLLABUS AS NEP 2020
(NEW AND RESTRUCTURED)
UNDER GRADUATE CURRICULA & SYLLABUS
B.Sc. (Hons.) Agriculture
2020**

**Semester System as per ICAR
Vth Deans Committee Report**

**Board of studies of Department of Agronomy
CSJM University Kanpur**

Virtual meeting for board of studies of department of agronomy, CSJM University Kanpur was held on 14 may, 2021 at 12:30 PM to discuss the syllabus for agronomy as per National Education Policy 2020 (NEP 2020) for the courses of B. Sc. (Hons.) Agriculture.

Honorable members of the virtual meeting decided by the university attended-

1. Prof. Nand lal, University Representative , Department of life science, CSJMU Kanpur
2. Dr. M P Yadav, convener, Dean Agriculture, CSJMU Kanpur
3. Dr. M P Singh, Associate Professor- Agronomy, Janta College Bakewar Etawah
4. Dr. Umesh Dubey, Asstt. Professor, JMV Ajitmal
5. Dr. Ram Pyare, Professor Agronomy & State Nodal Officer ICAR, CSAUA&T Kanpur
6. Dr. D D Yadav, Professor Agronomy, CSAUA&T Kanpur
7. Dr. Atar Singh, Director ATARI (ICAR), Kanpur
8. Dr. R K Singh, Professor Agronomy, BHU Varanasi
9. Dr. Raghuvir Singh, Ex Dean Agriculture, SVPUA&T Meerut

The following suggestions/recommendations are proposed by the honorable members in the BOS virtual meeting.

1. The sequence of the courses should be according to the order of semester.



2. Honorable members suggested/added reading books and e-resources for each course of the Agronomy.
3. Honorable member Dr. R K Singh suggested to include 'Tobacco' crop in Kharif season crops.
4. All members suggested that 'precision farming' word should be removed from the course AG-601 "Farming system, Precision Farming & Sustainable Agriculture" because this course (AG-601) doesn't have the content of precision farming. Although 'precision farming' content is included in the course AG-501 "Rainfed and Dryland Agriculture" but this course doesn't have 'precision farming' word in it's title.
5. All the members agreed for no necessity to change the syllabus excluding typo.

Therefore, I am sending this file for approval after mentioning the valuable suggestions offered by all the above. Kindly approve it.

Dr. M P Yadav
Dean/ Convener
CSJM University Kanpur

DEPARTMENT OF AGRONOMY

Course Code	Course Title	Credit Hours
AG-101	Fundamentals of Agronomy	3(2+1)
AG-205	Principles of Organic Farming	2(1+1)
AG-301	Crop Production Technology-I (Kharif Crops)	2(1+1)
AG-302	Practical Crop Production-I (Kharif Crops)	2(0+2)
AG-401	Crop Production Technology-II (Rabi Crops)	2(1+1)
AG-402	Practical Crop Production-II (Rabi Crops)	2(0+2)
AG-501	Rain Fed and Dryland Agriculture	2(1+1)



AG-601	Farming System, Precision Farming and Sustainable Agriculture	2(1+1)
	Total Credit	17

AGRONOMY

1. Fundamentals of Agronomy

3(2+1) AG-101

Theory

Agronomy and its scope, seeds and sowing, tillage and tilth, crop density and geometry, Crop nutrition, manures and fertilizers, nutrient use efficiency, water resources, soil-plant-water relationship, crop water requirement, water use efficiency, irrigation- scheduling criteria and methods, quality of irrigation water. Weeds- importance, classification, crop weed competition, concepts of weed management- principles and methods, herbicides- classification, selectivity and resistance, allelopathy. Growth and development of crops, factors affecting growth and development, plant ideotypes, crop rotation and its principles, adaptation and distribution of crops, harvesting and threshing of crops.

Practical

Identification of crops, seeds, fertilizers, pesticides and tillage implements. Identification of weeds in crops. Methods of herbicide and fertilizer application. Study of yield contributing characters and yield estimation. Numerical exercises on fertilizer requirement, plant population, herbicides and water requirement. Study of soil moisture measuring devices, measurement of irrigation water.

Suggested textbook and e-resources

- Principles of Agronomy by V T Subbiah Mudaliyar published by- The Bangalore printing and publishing co. Ltd. Mysore road Bangalore-18
- Introduction to Agronomy and principles of crop production by S R Reddy published by- Kalyani Publication
- Principles of Agronomy by T Yellamanda Reddy & G H Shankara Reddy by- Kalyani Publication
- Agronomy at a glance by P L Maliwal published by- Agrotech Publication Udaipur
- **E-resources**

- Visit www.iaritoppers.com for agri. study material.

2. Crop Production Technology-1 (Kharif Crops)

2(1+1) AG-301

Theory

Origin, geographical distribution, economic importance, soil and climatic requirements, varieties, cultural practices and yield of Kharif crops. Cereals - rice, maize, sorghum, pearl millet and finger millet; Pulses - pigeonpea, mungbean and urdbean; Oilseeds - til, groundnut and soybean; Fibre crops - cotton & jute; Forage crops – sorghum, cowpea, cluster bean and napier.

Practical

Rice nursery preparation, transplanting of rice, sowing of soybean, pigeonpea mungbean, maize, groundnut and cotton. Effect of seed size on germination. Effect of sowing depth on germination of kharif crops. Identification of weeds in kharif season crops. Top dressing and foliar feeding of nutrients. Study of yield contributing characters and yield calculation of kharif season crops. Study of crop varieties and important agronomic experiments at experimental farm. Visit to research centres related to crops.

Suggested textbook

- Production of field crops by T K Wolfe & M S Kipps published by- Srishti Book Distributors
- Science of crop production (Kharif Crops) -I by G S Tomar, SPS Tomar, and Dr. S N Khajanji published by- Kushal Publication
- Textbook of field crop production by Dr. Rajendra Prasad published by- Directorate of Information and Publication of Agriculture ICAR, KAB Pusa New Delhi 110012
- Crop management by U S Walia & S S Walia published by- Scientific Publisher Jodhpur
- Forage crops of India by T R Narayanan & P M Dabadghao published by- ICAR New Delhi

E-resources

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3. Crop Production Technology-II (Rabi crops)

2(1+1) AG-401

Theory

Origin, geographical distribution, economic importance, soil and climatic requirements, varieties, cultural practices and yield of Rabi crops; Cereals -wheat, barley and oat; Pulses - chickpea, lentil, peas; Oilseeds- rapeseed & mustard, linseed and sunflower; Sugar crops- sugarcane; Other crop- Potato; Forage crops -berseem, lucerne and oat.

Practical

Sowing methods of wheat and sugarcane, identification of weeds in rabi season crops. Numerical problems on seed requirement of rabi crops. Study of yield contributing characters of rabi season crops. Study of important agronomic experiments of rabi crops at experimental farms. Study of rabi forage experiments, visit to research stations of related crops.

Suggested textbook

- Production of field crops by T K Wolfe & M S Kipps published by- Srishti Book Distributors
- Science of crop production (Rabi Crops) -II by G S Tomar, SPS Tomar, and Dr. S N Khajanji published by- Kushal Publication
- Textbook of field crop production by Dr. Rajendra Prasad published by- Directorate of Information and Publication of Agriculture ICAR, KAB Pusa New Delhi 110012
- Crop management by U S Walia & S S Walia published by- Scientific Publisher Jodhpur
- Forage crops of India by T R Narayanan & P M Dabadghao published by- ICAR New Delhi

E-resources

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4. Farming System, Precision Farming and Sustainable Agriculture 2(1+1) AG-601

Theory

Farming System-scope, importance, and concept, Types and systems of farming system and factors affecting types of farming; Farming system components and their maintenance. Cropping system and pattern, multiple cropping system, Efficient cropping system and their evaluation. Sustainable agriculture- problems and its impact on agriculture. Conservation agriculture strategies, HEIA, LELA and LEISA and its techniques for sustainability. Integrated farming system components of IFS and its advantages, farming system and environment.

Practical

- Tools for determining productions & efficiencies in cropping and farming systems.
- Indicators of sustainability of cropping & Farming systems
- Site specific development of IFS models for different agro-climatic zones.
- Visit of IFS models in different agro climatic zones of nearby state Universities/Institutes and farmer's fields.

Suggested textbook

- Principles of Agronomy by T Yellamanda Reddy & G H Shankara Reddy published by Kalyani Publication
- Organic farming for sustainable Agriculture by Dahama AK published by- Agrobios (India) Jodhpur

E-resources

- www.jaritoppers.com

5. Practical Crop Production-I (Kharif Crops)

2(0+2) AG-302

Practical

Crop planning, raising field crops in multiple cropping systems: Field preparation, seed treatment, nursery raising, sowing. Nutrient, water and weed management and management of insect-pests diseases of crops, harvesting, threshing, drying winnowing, storage and marketing of produce. The emphasis will be given to seed production, mechanization, resource conservation and integrated nutrient, insect-pest and disease management technologies. Preparation of balance sheet including cost of cultivation, net returns per student as well as per team of 8-10 students.

6. Practical Crop Production-II (Rabi Crops)

2(0+2) AG-402

Practical

Crop planning, raising field crops in multiple cropping systems: Field preparation, seed, treatment, nursery raising, sowing, nutrient, water and weed management and management of insect-pests diseases of crops, harvesting, threshing, drying winnowing, storage and marketing of produce. The emphasis will be given to seed production, mechanization, resource conservation and integrated nutrient, insect-pest and disease management technologies. Preparation of balance sheet including cost of cultivation, net returns per student as well as per team of 8-10 students.

7. Principles of Organic Farming

2(1+1) AG-205

Theory

Organic farming, principles and its scope in India; Initiatives taken by Government (central/state), NGOs and other organizations for promotion of organic agriculture. Organic

nutrient resources and its fortification; Restrictions to nutrient use in organic farming; Choice of crops and varieties in organic farming; Fundamentals of insect, pest, disease and weed management under organic mode of production: Certification process and standards Of organic farming.

Practical

Visit of organic farms to study the various components and their utilization: Preparation of enrich compost, vermicompost, Indigenous technology knowledge (ITK) for nutrient, insect, pest disease and weed management; Cost of organic production system; Quality aspect, grading, packaging and handling.

Suggested textbook

- A handbook of Organic farming by Arun K Sharma published by- Agrobios (India), Jodhpur
- Principles of Organic Farming by P L Maliwal published by- Scientific Publisher

E-resources

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8. Rain fed and Dryland Agriculture:

2(1+1) AG-501

Theory

Rainfed and dryland agriculture- Introduction, types and history. Problems & prospects of rainfed agriculture in India. Soil and climatic conditions prevalent in rainfed areas. Drought: types, effect of water deficit on physic-morphological characteristics of the plants. Mechanism of crop adoption under moisture deficit conditions. Efficient utilization of water through soil and crop management practices, management of crops in rainfed areas. Contingent crop planning for aberrant weather conditions. Precision agriculture; concepts and techniques: their issues and concerns for Indian agriculture.

Practical

Studies on climatic classifications, studies on rainfall pattern in rainfed areas of the country. Studies on cropping pattern of different dryland areas in the country and demarcation of dryland area on map of India. Interpretation of metrological data and scheduling of supplemental irrigations on the basis of evapo-transpiration demand of crops effective rainfall and its calculations. Visit to rainfed research stations/watersheds.

Suggested textbook

- Dryland Agriculture by G Subba Reddy & Y V R Reddy published by- Agrotech Publishing Academy

- Textbook of Rainfed agriculture and watershed management by P L Maliwal published by- Scientific Publisher

E-resources

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A handwritten signature in green ink, possibly reading 'T. Bader', is written over a horizontal line.