Detailed Course Scheme

Bachelor of Science (Hons.)

Agriculture

Semester- VIII

(2023- 27)

DOC202306080045

GLOBAL UNIVERSITY

Educating stars for tomorrow

RNB GLOBAL UNIVERSITY

RNB Global City, Ganganagar Road,
Bikaner, Rajasthan 334601

OVERVIEW

RNB Global University follows Semester System along with Choice Based Credit System as per latest guidelines of University Grants Commission (UGC). Accordingly, each academic year is divided into two semesters, **Odd (July-December) and Even (January-June).** Also, the university follows a system of continuous evaluation along with regular updating in course curricula and teaching pedagogy.

The Curriculum for B. Sc Agriculture program for (January – June) Even Semester 2027 along with examination pattern is as follows:

1. Vision

Vision of School of Agriculture is to be established as advanced studies and research and skill-based centre for students and scholars.

2. Mission

Mission of School of Agriculture is to cultivate a scholarly mindset and analytical abilities in students, as well as train them in agricultural sphere, to reach the profession's daunting needs by providing dynamic knowledge in the field of agriculture.

3. Program Educational Objectives (PEOs)

After successful completion of the program, the graduates will be

AGPEO 1: Able to apply concepts of basic and applied sciences to Agriculture

AGPEO 2: Able to design and develop interdisciplinary and innovative systems.

AGPEO 3: Able to inculcate effective communication skills, team work, ethics, leadership in preparation for a successful career in agriculture and R&D organizations.

4. Program Outcomes (POs)

Students graduating with the B.Sc. (Hons.) Agriculture degree should be able to:

PO1. Agriculture knowledge: Apply the knowledge of basic and applied sciences to agriculture, agriculture fundamentals and agriculture specialization to the solution of complex agriculture problems. Apply the knowledge of regenerative agriculture with a conservation and rehabilitation approach to food and farming systems.

PO2. Problem analysis: Identify, formulate, review research literature, and analyze complex agriculture problems reaching substantiated conclusions using first principles of basic and applied sciences. Understand rapid appraisal of agricultural innovation systems, a diagnostic tool that can guide the analysis of complex agricultural problems and innovation capacity of the agricultural system towards futuristic agriculture.

PO3. Design/development of solutions: Design solutions for complex agriculture problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, social, and environmental considerations.

PO4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern agriculture and IT tools including prediction and modelling to complex agriculture activities with an understanding of the limitations. Learning use of GIS, IoT, Automation, Intelligent Systems in Farming & Agriculture development & trading.

PO6. The agriculture graduate and society: Apply reasoning informed by the contextual knowledge to assess social, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional agriculture practices. Recognize, analyze, and evaluate the critical human and social factors impacting agriculture. Understand the social dimensions of agriculture and its connections with food and environmental systems.

PO7. Environment and sustainability: Understand the impact of the professional agriculture solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.

PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the agriculture practice.

PO9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. Communication: Communicate effectively on complex agriculture activities with the agriculture community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. Project management and finance: Demonstrate knowledge and understanding of the agriculture and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. Able to design, launch and run a new business, to create job and not to seek for job. Also capable with an effective mix of knowledge, skills, and personal attitudes to be employed initially and function successfully in the required roles.

PO12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

5. Program Specific Outcomes (PSOs)

At the end of the program, the student will be able to:

PSO 1. Clearly understand the concepts and applications in the field of agriculture. Apply the knowledge of crop cultivation, crop improvement, soil and crop management for sustainable organic agricultural production and development.

PSO 2. Associate the learning from the courses related to agriculture to arrive at solutions to real world problems. Analyze and identifying complex agricultural problems and formulating ethical solutions using the principles of agricultural science, and business.

PSO 3. Have the capability to comprehend the technological advancements in the usage of modern design tools to analyze and design subsystems/processes for a variety of applications. Develop innovative processes, products, and technologies to meet the challenges in agriculture and farming practices

PSO 4. Possess the skills to communicate in both oral and written forms, the work already done and the future plans with necessary road maps, demonstrating the practice of professional ethics and the concerns for social and environmental wellbeing.

Course	Course outcomes: - After completion of these courses students should be able to
13.1 Semester - VIII	
20022000 - Production Technology for Bioagents & Biofertilizer	**CO1:** Apply the best bioagent and biofertilizer in the field for disease management and good growth of crops. **CO2:** Discover the methods of application of Rhizobium, Azotobacter, Azospirillum and phosphate solubilizing biofertilizers. **CO3:** Explain the use of biocontrol agents like Trichoderma, Pseudomonas and bio fertilisers like phosphor bacteria for sustainable agriculture and commercial marketing. **CO4:** Create a favourable environment and conditions for mass production of bioagents and biofertilizers. **CO5:** Alternative solutions and uses of Bioagents & Biofertilizer.
20022100 - Seed Production, Processing and Technology	**CO1:** Tell about different seed production procedures for various field crops. **CO2:** Explain the extent and relevance of seed technology in agriculture, as well as the function of officials and regulations, such as the Seed Act and the Seed Order, in quality seed production. **CO3:** Interpret the farm income by producing high yielding disease free quality seed and decrease the cost of cultivation also. **CO4:** Analyze the genetic and physical purity of seed, as well as the health state of seeds of a variety, during seed processing. **CO5:** Elaborate breeding techniques, methods, and breeding objectives in various crops to aid in the production of better varieties.
20022200 - Mushroom Cultivation Technology	**CO1:** Define mushrooms, types (edible & poisonous) of mushroom, cultivation of different edible mushrooms Which is the best method to. **CO2:** Outline the climatic requirements of mushroom cultivation, illustrate the knowledge on diseases and pests of mushroom and their management **CO3:** Utilize the Knowledge to Produce Pleurotus / button mushroom for commercial marketing and harvesting and post harvesting processes of mushroom **CO4:** Take a part in Learning value added products preparation from mushroom **CO5:** Decide having the prospects of commercial mushroom production
20022300 - Commercial Beekeeping	**CO1:** Tell honey using their practical knowledge on commercial bee keeping. **CO2:** List the different species of honey bee. **CO3:** Explain the commercial methods of rearing. **CO4:** Illustrate the nature of different species of honey bee. **CO5:** Validity of ideas of Poultry by-products and their uses in agriculture farming.
20022400 -	**CO1:** Find the importance of horticulture in human diet

Commercial Horticulture	**CO2:** Develop the nurseries of different vegetables crops for the purpose commercial sale. **CO3:** Identify the role of vegetable in nutrition. **CO4:** Develop the entrepreneurship skill through modern practices **CO5:** Plan the nursery raising and its maintenance.
20022500 - Agriculture Waste Management	**CO1:** Define the type of agricultural wastes **CO2:** Compare various type of agricultural waste and their management. **CO3:** Categorise various type of waste and their management **CO4:** Perceive different techniques to manage agricultural waste and its sustainable use. **CO5:** Examine the methods of agricultural waste decomposition.
20022600 – Organic Crop Production Technology	**CO1:** Name the principles of organic farming in context of improving human health and amelioration of the environment. **CO2:** Summarise the Fundamental cultural practices including insect, pest, weed and disease management under organic crop production. **CO3:** Choose about government schemes and the role of NGOs in producing organic products. **CO4:** Take Part in knowledge on organic crop production and certification methods of organic produce. **CO5:** Discuss of Certification process and standards of organic farming; Processing, levelling, economic considerations and viability, marketing and export potential of organic products.
20022700 - Value addition in Milk	**CO1:** Classify how to increase the quality of milk and their products. **CO2:** Explain the concept of value addition in milk & dairy products. **CO3:** Classify the importance of value addition in dairy products. **CO4:** Develop different dairy products **CO5:** Validity of ideas of Poultry by-products and their uses in agriculture farming.
20022800 - Micro Propagation	**CO1:** Identify the use of equipment in tissue culture Laboratory. **CO2:** Make use of sterilization techniques for media, containers and small instruments, sterilization techniques for explants. **CO3:** Evaluate the culturing of explants: Seeds, shoot tip and single node, Callus induction. **CO4:** Develop the somatic embryos regeneration of whole plants from different explants, Hardening procedures. **CO5:** Importance of application of plant tissue culture in crop improvement.
20022900 – Poultry Production Technology	**CO1:** Identify indigenous and exotic breeds of poultry. **CO2:** Discover practical knowledge about Poultry management and the products produce from them, Introduce the diseases of poultry and its prevention (including vaccination schedule) and control of important diseases of poultry.

	CO3: Determine the ability to select different types of houses suited in specific climatic conditions for best management of poultry, Incubation, Brooding and Hatching **CO4:** Discuss digestive system of poultry, classification of feed stuffs, nutrients and their functions with poultry diseases. **CO5:** Validity of ideas of Poultry by-products and their uses in agriculture farming.

13.2 Mapping: Semester – VIII

20022000	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	2			2		3	3	3
CO2		3		3	1	2	2				3	
CO3	3	3	3	3	3	2		3	2	2		3
CO4	3		3		2	3	2	2	3			
CO5	2	3	2	3	3	3	3	2	3	3	3	3

20022100	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	2	3	3	3	2	3	2	2
CO2	2	3	2			3	2		3		2	3
CO3	3	3		3	3	2	3	2	2		2	
CO4	2	2	3				2		3	2	3	3
CO5	3	3	3	3	3			3	2	3		3

20022200	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	2	2	2	2	3	3	3	3
CO3	3	3	2	3	3	3	3	2	2	3	2	3
CO4	3	2	3	3	3	3	3	2	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3	3

20022300	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	3	2		2	2		3	2
CO2	2	3		2						2	2	3
CO3	3		3		3	3	3					2
CO4	2	2		2		2		3	3	3		
CO5		3	2	3	3	3	3	2	3	3		3

20022400	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	3	2	2	2	3	2	2	2	3
CO2	2	3	2	1	3	2	2	2	1	2	2	2
CO3	2	2	1	2	2	3	1	2	2	2	2	1
CO4	1	2	3	2	1	2	2	1	3	1	1	2
CO5	2	2	3	3	3	3	2	2	2	2	3	3

20022500	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	2	1	2	1	2	1	2	2	2
CO2	2	3	2	3	2	2	1	2	1	2	1	2
CO3	3	2	3	3	2	2	2	1	1	1	1	2
CO4	2	2	2	1	1	1	1	2	2	1	2	1
CO5	2	2	2	3	3	3	3	3	3	3	3	2

20022600	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2				3	3	3	2	2		2
CO2	3	2	2	3		3	3		2	2		2
CO3	2				2	2	2		3	2	2	2
CO4	3			2	2	3	3	3	2	2	2	
CO5	2	3	2	3	3	3	3		3	3		3

20022700	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2		2		2		3	2		3
CO2	3	3		2		2		2	3		2	
CO3	2		3			2				3	2	2
CO4	3	3	2	2	3		3		1			2
CO5	2	3		3	3	3	3	2	3	3		3

20022800	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	3	2		2	2		2	3	3
CO2	3	3	3	2	2	2	2		2		3	3
CO3	3	3	3		2	2						3
CO4	3		3	2				2	3	2	3	3
CO5	2	3		3	3	3	3		3	3		3

20022900	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3					2		2	2	2	3	
CO2	2	3	3	3	2			2	2		3	2
CO3	2	2	3	2	3	3	2		2	2	2	3
CO4	2		2	3		3		2		2	2	3
CO5	2	3		3	3	3	3		3	3		

Note:

This is a tentative lesson plan. The same may change from faculty to faculty as per the teaching pedagogy adopted by the faculty.

Course Scheme

Semester VIII

READY- Component III (Experiential Learning Programme)

Modules for Skill Development and Entrepreneurship

A student has to register 20 credits opting for two modules of (0+10) credits each (total 20 credits) from the package of modules.

Course Code	Title of the module	Department	Credits
20022000	Production Technology for Bioagents & Biofertilizer	Soil Science & Agricultural Chemistry & Plant pathology	0+10
20022100	Seed Production, Processing and Technology	Seed Science & Technology	0+10
20022200	Mushroom Cultivation Technology	Plant Pathology	0+10
20022300	Commercial Beekeeping	Entomology	0+10
20022400	Commercial Horticulture	Horticulture	0+10
20022500	Agriculture Waste Management	Agronomy	0+10
20022600	Organic Crop Production Technology	Agronomy	0+10
20022700	Value addition in Milk	Animal Husbandry	0+10
20022800	Micro Propagation	Horticulture	0+10
20022900	Poultry Production Technology	Animal Husbandry	0+10

Project Preparation Modules for Experiential Learning/Hands of Training

1. Project Title.
2. Student name/ ID No.
3. Department/Section
4. Name of Guide/Instructor/Supervisor/Designation/Department
5. Justification/Relevance of Project
6. Project Activities/Methodologies
7. Project of Output/results
8. Summary & Conclusion
9. Future prospects of case study & suggestions
10. References
11. Appendices.

Note: The review of Syllabus happens on periodic basis for the benefit of the students. In case there are changes in curriculum due to review, students would be intimated in writing.

…….End of Document……..