J.S. University, Shikohabad

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VALUE ADDED COURSE

Farm Structures and Rural Infrastructure: Design and Construction of Agricultural Facilities

Faculty of Agricultural Sciences

	J.S. University, Shikohabad Faculty of Agricultural Sciences	Value Added Course
		AGVAC-05

Farm Structures and Rural Infrastructure: Design and Construction of Agricultural Facilities

Course Overview: This course aims to provide learners with an understanding of farm structures and rural infrastructure, including the design and construction of agricultural facilities. Through lectures, case studies, and hands-on activities, learners will develop skills in designing and constructing various agricultural facilities, such as farm buildings, irrigation systems, and rural roads.

Course Outcomes: Upon completion of this course, learners will be able to:

1. Understand the principles and concepts of farm structures and rural infrastructure, including the importance of proper design and construction in agriculture.
2. Design and evaluate agricultural facilities, such as farm buildings, irrigation systems, and rural roads, based on their intended purpose and function.
3. Apply knowledge of farm structures and rural infrastructure to improve farm efficiency, productivity, and profitability.
4. Identify and assess the environmental and social impacts of farm structures and rural infrastructure, and design strategies to mitigate them.
5. Understand the economic and policy factors that influence the design and construction of agricultural facilities, and apply this knowledge to develop sustainable rural infrastructure plans.

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Course Outline:

Module 1: Introduction to Farm Structures and Rural Infrastructure

- Importance of proper design and construction of agricultural facilities
- Basic concepts of farm structures and rural infrastructure
- Types of agricultural facilities for different types of landscapes

Module 2: Farm Buildings

- Design principles and criteria for farm buildings, such as barns, sheds, and storage facilities
- Performance evaluation and optimization of farm buildings
- Case studies of successful farm building applications in different landscapes

Module 3: Irrigation Systems

- Design principles and criteria for irrigation systems, such as drip and sprinkler systems
- Performance evaluation and optimization of irrigation systems
- Case studies of successful irrigation system applications in different landscapes

Module 4: Rural Roads

- Design principles and criteria for rural roads, including drainage and erosion control
- Performance evaluation and optimization of rural roads
- Case studies of successful rural road applications in different landscapes

Module 5: Environmental and Social Impacts of Farm Structures and Rural Infrastructure

- Environmental and social impacts of farm structures and rural infrastructure, including land use, biodiversity, and community development

- Strategies to mitigate the environmental and social impacts of farm structures and rural infrastructure
- Case studies of successful environmental and social management of farm structures and rural infrastructure

Module 6: Economic and Policy Aspects of Farm Structures and Rural Infrastructure

- Economic and policy factors influencing the design and construction of agricultural facilities
- Financing and investment options for farm structures and rural infrastructure
- Sustainable rural infrastructure planning and implementation

Assessment:

- Quizzes and assignments will be given at the end of each module to test learners' understanding of the concepts covered.
- A final project will require learners to design an agricultural facility for a specific landscape.

Course Duration: This course is designed to be completed in 8 weeks, with approximately 4 hours of study per week.

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Book References:

1. Farm Buildings: A Compilation of Plans for General Farm Barns, Cattle Barns, Dairy Barns, Hog Barns, Sheep Folds, Poultry Houses, Silos, Feeding Racks, Farm Gates, Sheds, Etc. by The Sanders Publishing Company
2. Irrigation Engineering and Hydraulic Structures by Santosh Kumar Garg
3. Rural Roads: A Construction and Maintenance Guide for Low-Volume Roads in India by the Indian Academy of Highway Engineers
4. Sustainable Rural Infrastructure Development: Fundamentals and Applications by B. S. Das and S. K. Gupta
1. Planning and Designing Rural Roads by P. K. Sarkar and S. K. Gangopadhyay

(Name of Faculty)
Course Coordinator

(Name of Faculty)
Dean of Faculty

(Name of Faculty) Director General