J.S. University, Shikohabad

Established by UP Govt. Act No. 07 of 2015
Recognized by U.G.C. under section 2 (f) of Act-1956

VALUE ADDED COURSE

Agricultural Machinery and Equipment Design, Selection, and Management

Faculty of Agricultural Sciences

	J.S. University, Shikohabad Faculty of Agricultural Sciences	Value Added Course
		AGVAC-10

Agricultural Machinery and Equipment Design, Selection, and Management

Course Overview: This course aims to provide learners with an understanding of agricultural machinery and equipment design, selection, and management. Through lectures, case studies, and hands-on activities, learners will develop skills in designing, selecting, and managing agricultural machinery and equipment for optimal performance, safety, and resource use efficiency.

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

1. Understand the principles and concepts of agricultural machinery and equipment design, selection, and management.
2. Analyze and evaluate the performance, safety, and resource use efficiency of agricultural machinery and equipment.
3. Design and select agricultural machinery and equipment for specific applications, crops, and landscapes.
4. Apply knowledge of agricultural machinery and equipment to improve crop productivity, resource use efficiency, and profitability.
5. Understand the economic and policy factors that influence the adoption of agricultural machinery and equipment, and apply this knowledge to develop sustainable agricultural machinery and equipment plans.

Course Outline:

Module 1: Introduction to Agricultural Machinery and Equipment

- Basic concepts and principles of agricultural machinery and equipment design, selection, and management
- Overview of agricultural machinery and equipment technologies and innovations

Module 2: Performance Evaluation and Safety of Agricultural Machinery and Equipment

- Performance evaluation of agricultural machinery and equipment, including efficiency and effectiveness measures
- Safety evaluation and management of agricultural machinery and equipment
- Case studies of successful agricultural machinery and equipment design and management

Module 3: Agricultural Machinery and Equipment Selection and Design

- Selection criteria and methods for agricultural machinery and equipment, including cost-benefit analysis and multi-criteria decision making
- Design considerations for agricultural machinery and equipment, including crop-specific and landscape-specific factors
- Case studies of successful agricultural machinery and equipment selection and design

Module 4: Resource Use Efficiency in Agricultural Machinery and Equipment

- Optimization of resource use efficiency in agricultural machinery and equipment, including energy, water, and fertilizer use
- Precision agriculture and precision machinery applications in resource use efficiency
- Case studies of successful resource use efficiency in agricultural machinery and equipment

Module 5: Economic and Policy Aspects of Agricultural Machinery and Equipment

- Economic and policy factors influencing the adoption of agricultural machinery and equipment
- Financing and investment options for agricultural machinery and equipment

- Sustainable agricultural machinery and equipment 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 and select agricultural machinery and equipment for a specific crop and landscape.

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

Book References:

1. Agricultural Machinery by P. Singh and P. B. Hase
2. Design and Development of Agricultural Machinery by P. R. Deshmukh and D. G. Thakare
3. Selection and Application of Advanced Machinery and Equipment in Agriculture by S. S. Yadav and R. K. Yadav
4. Sustainable Agriculture Machinery and Equipment Design by G. S. Vijaya Raghavan and V. S. Raju
1. Farm Machinery and Equipment Management by R. L. Hough and J. B. Thomsen

(Name of Faculty)
Course Coordinator
Dr. Ravi Kumar

(Name of Faculty)
Dean of Faculty
Dr. R. A. Kumar

(Name of Faculty)
Director General
Dr. Ganga Yadav