

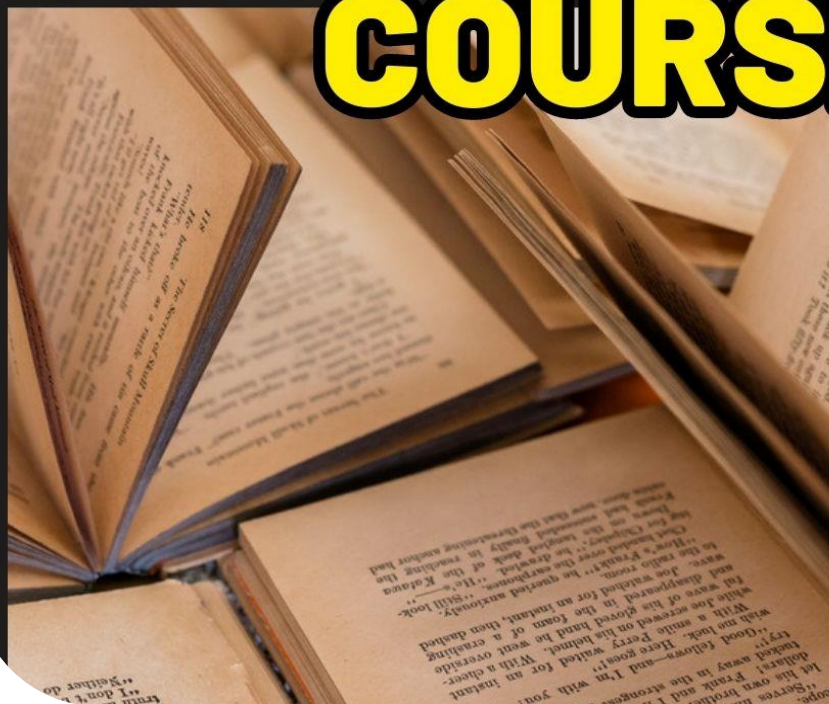


SHRI GURU RAM RAI UNIVERSITY DEHRADUN



VALUE ADDED COURSES

SGRRU





SHRI GURU RAM RAI
UNIVERSITY
Quest for Excellence



SGRR UNIVERSITY

Brochure of Value-Added Courses College of Agricultural Sciences 2018-19



ABOUT THE UNIVERSITY

Shri Guru Ram Rai University was established by a religious and philanthropic leader, Shri Mahant Devendra Dass Ji Maharaj in the year 2017. It is situated in the heart of city, Uttarakhand. We are extremely privileged to extend the values and ethos of the Shri Guru Ram Rai Education mission through SGRR University to impart quality education and in successfully placing more than 80% students in various companies across the globe. SGRR University has humongous campus spread over 80 acres of land. Its state-of-art facilities give opportunities to develop leadership skills and to achieve professional excellence. It has 3500+ students from different countries, 29 states and Union Territories and providing cultural melange and global exposure to our students. One of the biggest boosts from university is its unmatched experience in delivering quality education that helps to develop confidence and will give you more knowledge, industry exposure, building good networking and high self-esteem. This will change your overall personality and develop you into a complete professional to face any challenge.

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INTRODUCTION

Traditional education provides a strong foundation, but to stay competitive and relevant, individuals must continually enhance their skill set. Enter value-added courses, a gateway to a world of specialized expertise designed to complement and enrich existing knowledge.

Value-added courses go beyond the conventional academic curriculum, offering practical insights and hands-on experience in niche areas. These courses are meticulously crafted to bridge the gap between theoretical learning and real-world application, empowering individuals to navigate the complexities of contemporary professional landscapes.

Conduction of value added courses :

Value Added Course is not mandatory to qualify for any programme and the credits earned through the Value-Added Courses shall be over and above the total credit requirement prescribed in the curriculum for the award of the degree. It is a teacher assisted learning course open to all students without any additional fee.

Classes for a VAC are conducted during the RESERVED Time Slot in a week or beyond the regular class hours. The value-added courses may be also conducted during weekends / vacation period. A student will be permitted to register only one Value Added Course in a Semester.

student will be encouraged to opt for the VAC offered by his/her parent Department/Faculty. Industry Experts / Eminent Academicians from other Institutes are eligible to offer the value-added course. The course can be offered only if there are at least 5 students opting for it. The students may be allowed to take value added courses offered by other departments after obtaining permission from Dean offering the course. The duration of value added course is 30 hours with a combination 18 hours (60%) of theory and 12 hours (40%) of practical. However, the combination of theory and practical shall be decided by the course teacher with the approval of the Dean

Guidelines for conducting value added courses

- ❖ Value Added Course is not mandatory to qualify for any program.
- ❖ It is a instructor supported learning course open to all students without any added fee.
- ❖ Classes for VAC will be conducted during the **RESERVED** Time Slot in a week or beyond the regular class hours.
- ❖ The value-added courses may be also conducted during weekends / vacation period.
- ❖ A student will be permitted to register only one Value Added Course in a Semester.

- ❖ Students may be permitted to enrol in value-added courses offered by other departments/ Schools after obtaining permission from the Department's Head offering the course.

Duration and venue

- ❖ The duration of value-added course should not be less than 30 hours.
- ❖ The Dean of the respective School shall provide class room/s based on the number of students/batches.
- ❖ VAC shall be conducted in the respective School itself.

Registration procedure

The list of Value-Added Courses, along with the syllabus, will be available on the University Website. A student must register for a Value-Added Course offered during the semester by completing and submitting the registration form. The Department Head shall segregate according to the option chosen and send it to the Dean of the school offering the specific Value-Added Courses.

- Each faculty member in charge of a course is responsible for maintaining Attendance and Assessment Records for candidates who have registered for the course.
- The Record must include information about the students' attendance and Assignments, seminars, and other activities that were carried out.
- The record shall be signed by the Course Instructor and the Head of the Department at the end of the semester and kept in safe custody for future verification.
- Each student must have a minimum of 75% attendance in all courses for the semester in order to be eligible to take certificate.
- Attendance requirements may be relaxed by up to 10% for valid reasons such as illness, representing the University in extracurricular activities, and participation in NCC.
- The students who have successfully completed the Value Added Course shall be issued with a Certificate duly signed by the Authorized signatories.

Micro irrigation systems in Agriculture

Course Code: VAC2018-12

Course Objectives:

- To impart the basic knowledge about importance and scope of water efficient micro-irrigation.
- To develop understanding of role of micro-irrigation systems in horticulture.
- It will enable students to learn various types of micro-irrigation systems.
- It will help to know installation and maintenance of micro-irrigation systems.

Course Outcome :

On Successful completion of course the student will be able to:

- Imparted the basic knowledge about importance and scope of water efficient micro-irrigation.
- Developed understanding of role of micro-irrigation systems in horticulture.
- Students to learned various types of micro-irrigation systems.
- installed and maintenance of micro-irrigation systems.

Course Content :

Module-I (Total Topics-08 and Hrs.8) Micro-irrigation: Introduction, history and scope. Role of micro-irrigation in Horticulture.

Module-II (Total Topics-08 and Hrs.8) Irrigation methods; Concept and types of micro-irrigation systems.

Module-III (Total Topics-12 and Hrs.8) Drip irrigation: Introduction and types; Design consideration and system layout. Types and selection of emission devices. Hydraulics of drip irrigation system pipe network. Installation, operation and maintenance of drip irrigation system. Demonstration of drip irrigation components.

Module-IV (Total Topics-8 and Hrs.6) Sprinkler irrigation: Layout, installation, operation and maintenance. Fertigation and Bubbler irrigation system. Automation of micro irrigation systems (MIS).

References :

- Hartmann, H.T. and Kester, D.E., 1989. Plant Propagation: Principles and Practices. Prentice Hall of India.
- Peter, K.V. 2012. Basic of Horticulture. New India Publ. Agency.
- Michael A. M. (2010) Irrigation Theory and Practice, Vikas Publishing House Pvt. Ltd., Delhi
- Howell, T.A., D.S. Stevenson, F.K. Aljibury, H.M. Gitlin, I-Pai Wu, A.W.

- Warrick, and P.A.C. Raats. (1980). Design and Operation of Trickle (Drip) Systems. (In Design and Operation of Farm Irrigation Systems Edited by Jensen M.E.). ASAE Monograph 3. St. Joseph, MI.
- Saini, G.S. 2016. A Text Book of Olericulture and Floriculture. Aman Publication House.
- Salunkhe, D.K. and Kadam, S.S. 1998. Hand Book of Vegetables Science and Technology Production, Composition, Storage and processing. Marcel Dekker.

Contract Farming in India

Course Code: VAC2018-13

Course Objectives:

- To know about the basics concepts and principles of contract Farming.
- To understand about the Regulations and Models of contract farming In India, Indian Contract Act of 1872, the Model APMC (Agricultural Produce Market Committee) Act.
- To study about various types of business models of contract farming in india.
- To Acquaint with Project formulation and management-coordination, crop husbandry, human resource.

Course Outcome :

- On Successful completion of course the student will be able to:
- Understood about the basics concepts and principles of contract Farming.
- Understood about the Regulations and Models of contract farming In India, Indian Contract Act of 1872, the Model APMC (Agricultural Produce Market Committee) Act.
- Studied about various types of business models of contract farming in india.
- Acquainted with Project formulation and management-coordination, crop husbandry, human resource.

Course Content :

Module-I : Introduction: to the contract farming, Production and Supply Agricultural/Horticultural produce, contracts between producers/suppliers and buyers. Outline conditions for the production of farm produce, objectives of the course.

Module-II : Regulations and Models of contract farming In India, Indian Contract Act of 1872, the Model APMC (Agricultural Produce Market Committee) Act of 2003 includes contract farming-specific provisions such as mandatory registration of contract farming sponsors and dispute resolution, NITI Aayog , APMC, Model Contract Farming Act, 2018.

Module-III : Business Models of contract Farming, Contract farming business models, Informal model, Intermediary model, Centralized model, multipartite model, Nucleus estate model.

Module-IV : Prospects of contract farming in India in view of interest for commercialization of agriculture. Active organizations in contract farming and their success stories.

Module-V : Project formulation and management-coordination, crop husbandry, human resource. Advantages of contract farming for farmers and sponsors and the problems faced by them.

Module-VI : Advantages and Disadvantages of contract farming.

References:

- "Contract Farming in India: Theory and Practice" by Sukhpal Singh and Tarlok Singh Sahota
- "Agricultural Contracting in India: Policies and Practices" edited by Gopal Naik
- "Contract Farming and Tenancy Reforms: Entangled Without Tether" by Venkatesh Athreya and R. V. Bhavani
- "The New Peasant Economy: The Rise of Contract Farming in Developing Countries" by Thomas Reardon and Christopher B. Barrett
- "Emerging Markets and Contract Farming in Agriculture" by Sukhpal Singh
- "Indian Agriculture: Performance, Growth and Challenges" by Peter Briggs and A.S. Bhullar
- "The Political Economy of Agrarian Change: Natures of Agrarian Transformation in India" by Kailash Sarap
- "Agricultural Risk, Insurance and Income: A Study of the Impact and Design of India's Comprehensive Crop Insurance Scheme" by P.K. Mishra

Industrial dairy processing

Course Code: VAC2018-14

Course Objective:

This course provides an in-depth understanding of the principles and practices of industrial dairy processing. Topics include milk production, quality control, processing technologies, product development, and regulatory compliance. Students will gain practical knowledge through hands-on experiences and case studies.

Course Outcome :

On Successful completion of course the student will be able to:

- Understood the principles and practices of industrial dairy processing.
- Acquainted milk production, quality control, processing technologies, product development, and regulatory compliance.
- Students gained practical knowledge through hands-on experiences and case studies.

Course Content:

Module-I (Total Topics-10 and Hrs.8) Introduction to Dairy Industry Overview of the dairy industry. Historical perspective and current trends. Importance of industrial dairy processing. Packaging materials and technologies, Food safety regulations, Emerging trends in dairy processing.

Module-II (Total Topics-12 and Hrs.8) Milk Composition and Quality Composition of milk, Factors affecting milk quality, Quality control measures. Good Manufacturing Practices (GMP), Hazard Analysis and Critical Control Points (HACCP), Quality control techniques.

Module-III (Total Topics-10 and Hrs.8) Milk Collection, Transportation, and Storage Milk collection systems, Transportation methods, Cold chain management, Storage conditions and shelf life Spray drying, Evaporation, When processing and utilization.

Module-IV (Total Topics-10 and Hrs.6) Dairy Processing Technologies Pasteurization and sterilization, Homogenization, preparation and standardization, Emerging processing technologies Cheese production, Butter and ghee manufacturing, Yogurt and fermented dairy products.

References:

- "Dairy Processing and Quality Assurance" by Ramesh C. Chandan, Arun Kilara, and Nagendra P. Shah

- "Dairy Science and Technology, Second Edition" by P. Walstra, Pieter Walstra, Jan T. M. Wouters, and Tom J. Geurts
- "Dairy Chemistry and Biochemistry" by Patrick F. Fox, Paul L. H. McSweeney, Timothy M. Cogan, and Timothy P. Guinee
- "Modern Dairy Technology: Advances in Milk Processing" by R. K. Robinson
- "Milk Processing and Quality Management" by A.Y. Tamime
- "Handbook of Dairy Foods and Nutrition" by Gregory D. Miller, Judith K. Jarvis, and Lois D. McBean
- "Principles of Dairy Management" by C. J. C. Phillips
- "Cheese: Chemistry, Physics and Microbiology" by P. L. H. McSweeney, Patrick F. Fox, Paul D. Cotter, and David W. Everett

Natural Farming

Course Code: VAC2018-15

Course Objectives:

- To impart the basic knowledge about natural farming.
- To develop understanding of organic food.
- To develop the skills, of natural farming.
- To develop knowledge of diversified farming.

Course Outcome :

On Successful completion of course the student will be able to:

- Imparted the basic knowledge about natural farming.
- Developed understanding of organic food.
- Developed the skills, of natural farming.
- Developed knowledge of diversified farming.

Course Content :

Module-I: (Total Topics-10 and Hrs.8) History and heritage of natural farming. Pioneers and scholars of Natural Farming, and their contribution to the heritage of Natural Farming. Historical methods of livestock management, health, nutrition, soil fertility and plant protection. Origin of concept of natural farming, History of development in agro-ecology & natural farming, principles of agro-ecology, Basic concept, philosophy, definition, principles and components of natural farming. Merits and demerits of natural farming. Principles of Fukuoka and other methods of natural farming, Natural farming

Module-II: (Total Topics-12 and Hrs.8) Ecosystems: Definition, concept and components, The water cycle, nutrient cycle and energy cycle, Types of natural farming systems and practices (Bio- dynamic, home farming, nature co farming, rishi Krishi, pancha gavya Krishi, Yogic farming etc). Concept and elements of natural systems, Classification of farming types (Based on geographical condition, levels of technology & external input use, labour demand of produce etc.), Subsistence farming: Intensive subsistence and primitive subsistence, Traditional farming, intensive conventional farming, sound farming, integrated farming, conservation agriculture, eco-agriculture, ecologically intensive agriculture, organic farming, biodynamic farming, perm culture, cow based farming, Yogic kheti, natural farming.

Module-III: (Total Topics-10 and Hrs.8) Traditional farming, intensive conventional farming, sound farming, integrated farming, conservation agriculture, eco-agriculture, ecologically intensive agriculture, organic farming, biodynamic farming, perm culture, cow based farming, Yogic kheti, natural farming.

Module-IV: (Total Topics-10 and Hrs.6) Natural farming in India: Key policies, programmes and coverage, Challenges in growth of natural farming in India, Interventions for driving change, Case studies on natural farming in India, Farmers perspectives in natural farming, Research in natural farming in the World and India, Impact of natural farming (Yield, cost of production, manual labor, price of farm produce, net income, soil health, water use efficiency, resilience to adverse climatic conditions, pest and disease problems, nutrition of family members).

References:

- Ashlesha Khadse & Peter M. Rosset. Zero Budget Natural Farming in India from inception to institutionalization. 43(7-8), 848-849, Kanwar, J.S. (Ed.). 1976. Soil Fertility: Theory and Practice. ICAR.
- Boeringa R. (ed.). 1980. Alternative Methods of Agriculture. Elsevier, Amsterdam, 199 pp.
- Fukuoka M. 1978. The One-Straw Revolution: An Introduction to Natural Farming. Rodale Press, Emmaus, PA. 181 pp.
- Khurana, A. and Kumar, V. 2018. State of Organic and Natural Farming: Challenges and Possibilities Centre for Science and Environment, New Delhi.
- The Ultimate Guide to Natural Farming and Sustainable Living: Permaculture for Beginners (Ultimate Guides) by Nicole Faires (2016)