

SGRR UNIVERSITY

**Brochure of Value-Added Courses
School of Agriculture Sciences
2023-2024**

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 8500+ 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 of 67 years of 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.

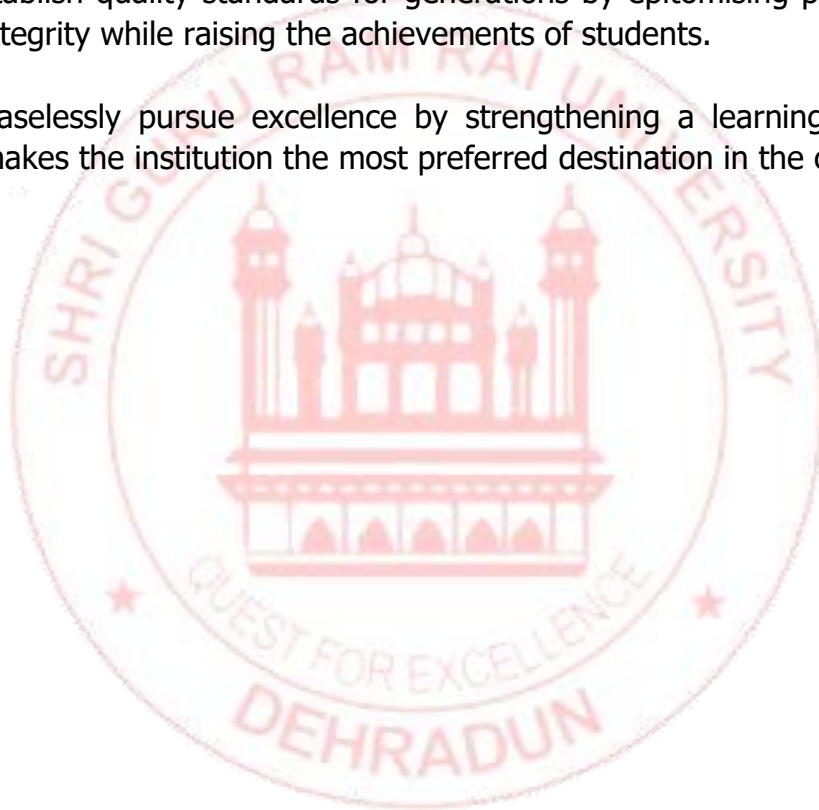
Vision

“To establish Sri Guru Ram Rai University to be a Center of Excellence in higher education, innovation and social transformation by nurturing inquisitive and creative minds and by enabling the stakeholders to become committed professionals and educators of national and global relevance.”

Mission

- ❖ To provide a comprehensive and sustainable educational experience that fosters the spirit of enquiry, scientific thinking and professional competence along with ethical and spiritual values
- ❖ To deliver a classic, well rounded learning experience that is distinctive and impactful on the young generation preparing them for a successful career
- ❖ To engage, inspire and challenge the stakeholders to become leaders with ethics and positive contributors to their chosen field and humane citizens
- ❖ To attract, train and retrain qualified staff to work efficiently to bring forth the maximum resource potential

- ❖ To develop committed and responsible professionals who work for the welfare of the society by providing innovative and efficient solutions and creating long term relationship with the stakeholders
- ❖ To create a sustainable career, by collaborating with stakeholders and participating in community partnership for life and livelihood in the local society in a responsive and dynamic way
- ❖ To make our students globally competent by introducing specialized training leading to professional capabilities and developing diverse skills in them for competitive advantage.
- ❖ To establish quality standards for generations by epitomising professionalism and integrity while raising the achievements of students.
- ❖ To ceaselessly pursue excellence by strengthening a learning environment that makes the institution the most preferred destination in the country.



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INTRODUCTION

The ever-changing global scenario makes the world more modest and needs high levels of lateral thinking and the spirit of entrepreneurship to cope up with the emergent challenges. Many a times, the defined skill sets that are being imparted to students today with Programme Specific Objectives in educational institutions become redundant sooner or later due to rapid technological advancements. No university curriculum can adequately cover all areas of importance or relevance. It is important for higher education institutions to supplement the curriculum to make students better prepared to meet industry demands as well as develop their own interests and aptitudes.

Objectives The main objectives of the Value-Added Course are:

- ✓ To provide students an understanding of the expectations of industry.
- ✓ To improve employability skills of students.
- ✓ To bridge the skill gaps and make students industry ready.
- ✓ To provide an opportunity to students to develop inter-disciplinary skills.
- ✓ To mould students as job providers rather than job seekers.

Course Designing The department interested in designing a Value Added Course should undertake Training Need Analysis, discuss with the generic employers, alumni and industrial experts to identify the gaps and emerging trends before designing the syllabus.

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 an 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.



Zero budget natural farming

Course Code: VCASAS019

Course Objectives:

- To impart the knowledge about the vegetable gardening.
- To assist the various types of vegetable gardening in India.
- To identify the various types of vegetables.
- To judge the maturity indices for various types of vegetables.

Course Outcomes:

- Educate about concepts of cow based farming
- Execute the various cultivation practices such as time of sowing, sowing, transplanting techniques, planting distance, fertilizer requirements, irrigation, weed management.
- Analyze the harvesting time and techniques of crops under ZBNF
- Understood the plant protection methods.

Course Content:

Module I:

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 including relay cropping, multi-variate cropping, recycling and food chain.

Module II:

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).

Module III:

Concept of panchagavya ,jeevamrit, beejamrit preparation. Principles and practices of cow urine in modern farming practices .Effect of cow products on animal and human health,soil properties and on environment.

Module IV:

Production of Inputs of ZBNF, namely, Jivamrita, Ghanamrita which may also promote the use of all kind of farm, animal, other wastes, weeds and herbs alongwith use of effective locally collected micro-organisms

References:

- Ashlesha Khadse & Peter M. Rosset. Zero Budget Natural Farming in India – from inception to institutionalization. 43(7-8), 848- Kanwar,J.S.(Ed.).1976.SoilFertility:TheoryandPractice.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)

Organic farm management

Course Code: VCASAS020

Course Objectives:

- To impart the knowledge about the organic farming.
- To introduce the concept of organic ecosystem and learn about biological magnification & its significance in present day scenario.
- To inoculate the importance of doing organic farming as the responsibility of every human being to ensure food safety, nutritional security and food security for the present as well as future generation
- To achieve sustainable development for every nation

Course Outcomes:

- Educate about concepts of organic farming
- Execute the various cultivation practices such as time of sowing, sowing, transplanting techniques, planting distance, fertilizer requirements, irrigation, weed management, etc.
- Analyze the harvesting time and techniques of various vegetable and spices crops, storage conditions and requirements as per the cultivated crops, etc.
- Learn about marketing organic products, understanding consumer demand and the economic aspect of Organic farming

Course Content:

Module I:

History and development, IFOAM, Definition and Principle- health, fairness, ecology and care, Need of Organic farming in present context and future prospects- barrier

Module II:

organic ecosystem: Structure and function, Productivity, Decomposition , Nutrient cycling, Eutrophication, Biological magnification

Module III:

Land preparation - Tools and Technique, Preparation of seed bed , manuring, sowing, watering and raising of seedling, Preparation of Organic Compost-Over ground compost, Pit compost, Liquid compost, Vermi compost.

Module IV:

Integrated Pest Management(IPM),integrated nutrient management, Crop rotation: need and benefits, Harvesting and Post Harvesting Management Inspection, Certification & Labeling procedure, Marketing & Export

References:

- Alvares, C. 1996. The Organic Farming Source Book. The Other India Press, Mapusa, Goa
- Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India
- Dongarjal R. P. and Zade S.B. 2019. Insect Ecology and Integrated Pest Management, Akinik Publications, New Delhi.
- Guideline of National Project on Organic Farming, Department of Agriculture and Cooperation, INM Division, Ministry of Agriculture, Govt. of India



Vertical farming

Course Code: VCASAS021

Course Objectives:

- To impart the knowledge about vertical farming
- To identify the various types of crops for vertical farming
- To judge the management practices for vertical farming

Course Outcomes:

- Understood the basic concepts of vertical farming
- Identify the various types of vertical farming
- Acquaint with the management practices in vertical farming
- Demonstrate the economics of vertical farming

Course Content:

Module I:

Introduction, Historical background, concept and types of vertical farming.

Module II:

Principles of vertical farming, innovations like hydroponics, aeroponics, aquaponics, local, zip grow, modular farms, bowery, skyfarm, sky greens

Module III:

Sustainable vertical farming ventures in India, structure and engineering inputs in vertical farming

Module IV:

Water and nutrient management efficiency in vertical farming .Future prospects and challenges in vertical farming in India

References:

- Ali F. And Srivastava C. (2017). Futuristic Urbanism-An overview of vertical farming and urban agriculture for future cities in India. International Journal of Advanced Research in Science, Engineering and Technology,4 (4), April 2017.
- Banerjee C. (2014). Up and Away! The Economics of Vertical Farming.Journal of Agricultural Studies, 2(1):40-60
- Hota S., Stobdon T. and Chaurasia O. P. (2018). Aeroponics and inflatable greenhouse in trans-Himalaya: Challenges and future perspective. New Age Protected Cultivation, ISPC, New Delhi: 4(2)18-20.

- Jain R. and Janakiram T. (2016). Vertical gardening: a new concept of modern era. In:Commercial Horticulture, © 2016, Editors, N.L. Patel, S.L. Chawla and T.R. Ahlawat,New India Publishing Agency, New Delhi, India
- Jankiram T. and Bhaskar S. (2018). Recent advances in protected cultivation in China. New Age Protected Cultivation, ISPC, New Delhi: 4(2):25-30.



Mushroom spawn production

Course Code: VCASAS022

Course Objectives:

- Enable the students to identify edible and poisonous mushroom.
- Provide Hands on training on spawn production
- To identify the various types of compost

Course Outcomes :

- Identify types of mushroom.
- Understand Techniques of spawn production
- Analyze the methods of compost preparation
- Understood the mushroom production and its value addition.

Course Content:

Module I:

Fundamentals of cultivation system- small village unit & larger commercial unit. Principles of mushroom farm layout- location of building plot, design of farm, bulk chamber, composting platform, equipments & facilities , pasteurization room & growing rooms..

Module II:

Principles of composting, machinery required for compost making, materials for compost preparation. Methods of Composting- Long method of composting (LMC) & Short method of composting.

Module III:

Facilities required for spawn preparation, Preparation of spawn substrate, preparation of pure culture, media used in raising pure culture, culture maintenance, and storage of spawn. Preparation of mother spawn, production of planting spawn, storage/transportation of spawn, Criteria for selection of good quality spawn. Cultivation of Button mushroom and paddy straw mushroom; Introduction to microbiology laboratory Laminar Air flow, Autoclave.

Module IV:

Sterilization and sanitation of mushroom house, instruments and substrate, inoculation, incubation and spawn production; Cultivation of *Volvariella volvacea* (paddy straw mushroom) and *Pluerotus sajorcaju* (oyster mushroom) using paddy straw/agricultural waste. Importance of casing mixture, Quality parameters of casing soil, different types of casing mixtures, commonly used materials. Collection of raw

materials, compost & composting, spawn & spawning, casing & case run, cropping & crop management, picking & packing. Visit to relevant Labs/Field Visits

References:

- Mushroom Production and Processing Technology, Pathak Yadav Gour (2010) Published by Agrobios (India).
- Pandey, R.K. and Ghosh, S.K. (1996). A handbook of Mushroom Cultivation. Emkey Publication.
- Pathak, V.N. and Yadav, N. (1998). Mushroom Production and Processing Technology. Agrobios, Jodhpur.
- Nita, B. (2000). Handbook of Mushrooms. Vol 1 & 2. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
- Tewari, P. and Kapoor S.C. (1998). Mushroom Cultivation, Mittal Publication, New Delhi



Quality potato production

Course Code: VCASAS023

Course Objectives:

- To impart the knowledge about the tuber crops.
- To assess the various methods of quality tubers.
- To identify the various types of management practices.
- To judge the maturity indices for potato.

Course Outcomes:

- Educate about concepts of tuber crops, Importance in human nutrition and national economy, etc.
- Execute the various cultivation practices such as time of sowing, sowing, transplanting techniques, planting distance, fertilizer requirements, irrigation, weed management, etc.
- Analyze the harvesting time and techniques of potato cultivation, storage conditions and requirements as per the cultivated crops, etc.
- Understood the transportation technology of harvested produce

Course Content:

Module I:

Definition and example of tuber crops Importance and scope of potato in India and in the World Types and uses of crops Area, production and yield of crops.

Module II:

layout, Site Selection, climate and Topography of land, Suitable soil requirement for cultivation, Propagation techniques used, Different types of Propagation structures.

Module III:

Nursery establishment, Management practices, Sowing techniques, Transplanting time and methods, New techniques of harvesting, Plant protection measures.

Module IV:

Post-harvest handling of potato, Importance of Market, Grading, Sorting, Packaging Material, New technologies to increase shelf life of produce.

References:

- Chattopadhyaya T.K. A Text Book of vegetable production Vol-II (Tropical fruits) Kalyani Publishers. 2014.
- Chattopadhyaya T.K. A Text Book of vegetable Vol-III (Sub- tropical fruits). Kalyani Publishers. 2014.

- Singh A. Fruits Physiology and production. Kalyani Publishers.2003. 5th Revised edition.

