



List of New Course (s) Implemented

Department : Rural Technology and Social Development

Programme Name : B.Sc. Rural Technology (04 Year Program)

Academic Year: 2023-24

List of New Course(s) Introduced

Sr. No.	Course Code	Name of the Course
1.	RTUATC1	Emergence of Rural Technology
2.	RTUALC1	Lab-Emergence of Rural Technology
3.	RTUATG1	Horticulture and Landscaping
4.	RTUALG1	Lab-Horticulture and Landscaping
5.	RTUATL1	Dairy Management and Products
6.	RTUALL1	Lab- Dairy Management and Products
7.	RTUBTC1	Poultry Production Technology
8.	RTUBLC1	Lab- Poultry Production Technology
9.	RTUBTG1	Microbial Technology
10.	RTUBLG1	Lab- Microbial Technology
11.	RTUBMDT1	Indigenous Art
12.	RTUBTL2	Herbal Production Technology
13.	RTUBLL2	Lab-Herbal Production Technology
14.	RTUBLL2	Herbal Production Technology
15.	RTUBLL2	Lab-Herbal Production Technology



Minutes of Meetings (MoM) of Board of Studies (BoS)

Academic Year : 2023-24

School : School of Interdisciplinary Education and Research

Department : Rural Technology and Social Development

Date and Time : September, 09, 2023 - 11:30 AM

Venue : Seminar hall



Department of Rural Technology and Social Development
GURU GHASIDAS VISHWAVIDYALAYA
Koni- BILASPUR 495009 (Chhattisgarh)
(A Central University established under No 25 of Central Universities Act, 2009)

Minutes of the Meeting of Board of Studies held on 26-09-2023

A meeting of Board of Studies (BOS) of the Department of Rural Technology and Social Development had been held on 26-09-2023 with following members to discuss, review and modify the syllabus for the degrees of B.Sc. programs in Rural Technology in compliance with NEP- 2020.

- I. Prof. R. Mehta (Chairman)
- II. Prof. R. S. Negi (External Expert) attended meeting online through google meet.
- III. Prof. P. R. Singh (Member)
- IV. Dr. Bhaskar Chaurasia (Member)
- V. Dr. Alka Mishra (Member)

Agenda: To discuss, review and finalize the new syllabus of four-year program of B. Sc Rural Technology (Honors and Honors with research) to be implemented from session 2023-24.

The Chairman of BOS welcome the BOS members and following resolutions were passed:

1. A draft of entirely new syllabus for four-year program of B. Sc. Rural Technology had been prepared with the help of all faculty members of the Department of Rural Technology in compliance with the national Education Policy- 2020 and as per guidelines of the Ordinance No 97 of the Guru Ghasidas Vishwavidyalaya. The syllabus consists of following features
 - a. Syllabus for four-year UG degree program namely B.Sc. Rural Technology will be of a total of 160 credit with 40 credit every year.
 - b. Degree program will have multiple entry-exit options considering UG Certificate, UG-Diploma, Degree, Honors Degree, and Honors degree with research as per GGV Ordinance No 97 in compliance with NEP-2020.
 - c. In entire syllabus, there will be Major, Minor, Multidisciplinary, Ability Enhancement, Skill Enhancement, Value Added and Vocational/ internship Courses as per GGV Ordinance No 97 and relevant rules issued time to time.
2. A detailed scheme and syllabus for four-year UG Degree program had been finalized, which is attached with minutes of meeting of BoS.

Meeting was ended with vote of thanks by BoS Chairman.

Prof. R. S. Negi

Prof. P. R. Singh

Dr. Bhaskar Chaurasia

Dr. Alka Mishra

Prof. R. Mehta (Chairman)

Signature of HOD, RT



Scheme and Syllabus

Department of Rural Technology and Social Development
Guru Ghasidas Vishwavidyalaya, Bilaspur, CG (26 September 2023)
Four Year UG Program as per NEP 2020

Semester	Courses	Paper Code	Name of the paper	Level	L/P/T	Credits	Total Credits
I	Major		Emergence of Rural Technology	2	L3+P1	4	20
	Minor		Horticulture and Landscaping	2	L3+P1	4	
	Multidisciplinary		Selection from Pool of Papers	1	L3	3	
	AEC		Language (Hindi/English)	1	L2	2	
	SEC		Dairy Management and Products	1	L2+P1	3	
	VAC		Selection from Pool of papers	1		2+2	
II	Major		Poultry Production Technology	2	L3+P1	4	20
	Minor		Microbial Technology	2	L3+P1	4	
	Multidisciplinary		Selection from Pool of papers	1		3	
	AEC		(Hindi/English)	1		2	
	SEC		Herbal Production Technology	1	L2+P1	3	
	VAC		Selection from Pool of papers	1		2+2	
The student must complete the 4-credit vocational course/Internship during summer term to get UG certificate if he/she wish to exit the program after first 2 semester.							
III	Major		Sericulture	3	L3+P1	4	20
	Major		Rural Energy Resources	3	L3+P1	4	
	Minor		Sericulture	3	L3+P1	4	
	Multidisciplinary		Selection from Pool of papers	1		3	
	AEC		(Hindi/English)	1		2	
	SEC		Basics of Mushroom Production	1	L2+P1	3	
IV	Major		Natural Product Management	3	L3+P2	5	20
	Major		Goat and Pig Farming	3	L3+P2	5	
	Major		Apiculture and Lac culture	3	L3+P1	4	
	Minor		Apiculture and Lac culture	3	L3+P1	4	
	AEC		(Hindi/English)	1		2	

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The student must complete the 4 credits vocational course/Internship either after first year or second year during summer term to get UG Diploma if he wishes to exit the program after 4 semesters.							
V	Major	Soil and Nutrient Management	4	L3+P2	5	21	
	Major	Watershed Management	4	L3+P2	5		
	Major	Organic Farming	4	L3+P2	5		
	Minor	Organic Farming	4	L2+P2	4		
	Internship	-	-	-	2		
VI	Major	Land Surveying, Levelling and Drawing	4	L3+P2	5	19	
	Major	Rural Social Structure and Planning	4	L3+P2	5		
	Major	Rural Health Care	4	L3+P2	5		
	Minor	Nursery Technology	4	L2+P2	4		
The students wish to exit after six semester upon securing 120 credits will be awarded UG degree in relevant subject/discipline							
After sixth semester, there will be two streams : (I) UG (Honours with research) and (II) UG (Honours). The students who will secure 75% and above may opt for UG (Honours with research).							
(I) Course structure for UG (Honours with research)							
VII	Major	Introduction to Remote sensing and GIS	5	L3+P2	5	19	
	Major	Introduction to Medicinal Plants	5	L3+P2	5		
	Major	Food Preservation Technology	5	L3+P2	5		
	Minor	Food Preservation Technology	4	L3+P1	4		
VIII	Major	Research Methodology and Ethics	5	L3+P2	5	21	
	Minor	Herbal Drug Formulation Technique	5	L3+P1	4		
	Research Project/Dissertation				12		

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(II) Course structure for UG (Honours)							
VII	Major	Introduction to Remote sensing and GIS	5	L3+P2	5	20	
	Major	Introduction to Medicinal Plants	5	L3+P2	5		
	Major	Crop Production Technology	5	L3+P2	5		
	Minor	Introduction to Medicinal Plants	5	L3+P1	4		
	Seminar	-	-	-	1		
VIII	Major	GIS and its Applications	5	L3+P2	5	20	
	Major	Introduction to Traditional Medicine Systems	5	L3+P2	5		
	Minor	Natural Product and Processing Techniques	5	L3+P1	4		
	Minor	Fundamentals of Entrepreneurship	5	L3+P1	4		
	Seminar	-	-	-	2		



Department of Rural Technology & Social Development
Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (CG)
Semester-wise syllabus for 4 Years UG Program, Session 2023-2024 onwards under NEP-2020
B. Sc. (Rural Technology)

SYLLABUS as per NEP- 2020		
B. Sc. I SEMESTER		
Course Title: EMERGENCE OF RURAL TECHNOLOGY		
Course Code: RTUATC1	Credit: 04	30+70
MAJOR/Level 2	L3+P1	Marks:100

Course outcomes

On completion of the course, the students will be able to:

1. Understand basics of evolution of man and agriculture.
2. Understand indigenous technical knowledge.
3. Understand Indian society and rural technology.

Indian Agriculture: Definition, evolution of man and agriculture, beginning of agriculture in Bharat, rich agricultural heritage of Bharat, need and importance for studying agricultural heritage, globally important agricultural heritage systems.

Farmers in *Indus* period, *Vedic* period, pre- & post-independence period, rainbow revolution, plant production and protection through indigenous technical knowledge based on farm implement, pest management, soil and water conservation.

Indian society: tribal- rural- urban, nature and characteristics, demography, Settlement pattern. Causes of poverty, unemployment, livelihood sources, migration.

Rural Technology: Definition, Innovation in rural areas, entrepreneurship and skill development.

Suggested Readings:

Handbook of agriculture, ICAR
Farmers' handbook on basic agriculture

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	1	-	2	3	3	-	-	3	1
CO2	3	3	1	-	2	3	3	-	-	3	1
CO3	3	3	1	-	2	3	3	-	-	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

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Department of Rural Technology & Social Development
Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (CG)
Semester-wise syllabus for 4 Years UG Program, Session 2023-2024 onwards under NEP-2020
B. Sc. (Rural Technology)

Course Title: LAB- EMERGENCE OF RURAL TECHNOLOGY		
Course Code: RTUALC1	Credit: 01	Marks:30+70

1. Exposure visits to Agricultural / Horticultural / Poultry Farm/ Dairy Farm
2. Preparation of different models based on theory course.
3. To study about success story, innovations of the farmers.

SYLLABUS as per NEP- 2020		
B. Sc. I SEMESTER		
Course Title: HORTICULTURE AND LANDSCAPING		
Course Code: RTUATG1	Credit: 04	30+70
MINOR /Level 2	L3+P1	Marks:100

Course outcomes

On completion of this course, the students will be able to:

1. Understand the knowledge about horticulture practices and its importance.
2. Learn detail information of orchard establishment and management will be able to disseminate this knowledge to the farmers.
3. Adopt horticulture as entrepreneurship.

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	1	-	2	3	3	-	-	3	1
CO2	3	3	1	-	2	3	3	-	-	3	1
CO3	3	3	1	-	2	3	3	-	-	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

Horticulture: Concept, scope, definition, economic importance and classification of horticultural crops, fruit and vegetable zones of India, exports and imports opportunities, Government schemes / programs related to horticulture and landscaping.

Establishment of orchard: site selection, principles, planning and layout of orchard, tools and implements. Management of orchard-planting systems, training and pruning, nutrient, water, weeds, and pests management in orchard trees. Cultivation practices of major fruit crops-Citrus fruits, papaya, banana, ber, guava and mango.

Fundamental of Floriculture, Scope and importance of floriculture in India, Importance and production technology of cut flowers and loose flowers. Production techniques of ornamental plants like rose, marigold, chrysanthemum, gladiolus, jasmine, dahlia, tuberose and gerbera.

Landscaping: Principles and components, landscape designs, Styles of garden: formal, informal and free style gardens; types of landscape: Urban landscaping, bio-aesthetic planning, eco-tourism, theme parks, indoor gardening.

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Department of Rural Technology & Social Development
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Semester-wise syllabus for 4 Years UG Program, Session 2023-2024 onwards under NEP-2020
B. Sc. (Rural Technology)

Plant components for landscaping: Lawns-Establishment and maintenance, Plants- herbs, annuals, hedges, climbers and creepers, cacti and succulents, flower borders and beds, ground covers, carpet beds, bamboo groves.

Course Title: LAB- HORTICULTURE AND LANDSCAPING		
Course Code: RTUALGI	Credit:01	Marks:30+70

1. Identification of garden equipment required for gardening and landscaping.
2. Preparation and maintenance of garden
3. Propagation and maintenance of annuals and perennials.
4. Training and Pruning of plants
5. Cutting, budding and grafting practices.
6. Identification of common garden weeds.
7. Making of Bonsai, Terrarium culture.

Suggested Readings:

Commercial Floriculture – V.H. Ries and A. Lasrice
Floriculture and Land Scaping – Desh Raj
Cultivation of Minor Fruit – B. C. Das and S. N. Das
Plant Propagation and Nursery Husbandary – J. S. Yadav
Fruit Production- K. N. Dubey
Modern Oleri and Floriculture – G. S. Sainey

SYLLABUS as per NEP- 2020		
B.Sc. I SEMESTER		
Course Title: DAIRY MANAGEMENT AND PRODUCTS		
Course Code: RTUATLI	Credit: 03	30+70
SEC/ Level 1	L2+P1	Marks:100

Course outcomes

On completion of this course, the students will be able to:

1. Identify different breeds of cows and buffaloes and their feeding management
2. Understand housing and health management of cows and buffaloes.
3. Understand general caring practices needed for cows and buffaloes.
4. Prepare various dairy products and enhance their skill for establishment of Dairy.

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	1	-	3	3	3	-	-	3	1
CO2	3	3	1	-	3	3	3	-	-	3	1
CO3	3	3	1	-	3	3	3	-	-	3	1
CO4	3	3	1	-	3	3	3	-	-	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

Introduction of important breeds of cows and buffaloes, Government schemes / programs related to Dairy Industry.

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Department of Rural Technology & Social Development
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Semester-wise syllabus for 4 Years UG Program, Session 2023-2024 onwards under NEP-2020
B. Sc. (Rural Technology)

Dairy farm management: Location of different farm buildings, Design and structure of sheds/shelters materials used for shed/shelters, essential appliances and hygiene, types of barns, housing systems. Care of dry and milch cows and maintenance of different dairy cattle registers.

Fodder: Classification, hay preparation, types, qualities, principles and calculation of ration. Animal Breeding Methods: Mating seasons, inbreeding and out breeding, their advantages and disadvantages, Artificial Insemination- its methods, importance, limitations.

Animal Diseases: Foot and mouth disease, Anthrax, Black Quarter, Rinderpest, Mastitis and Haemorrhagic septicaemia –their diagnosis, treatment, precautions, vaccination schedule.

Dairy Products: Processing of milk, pasteurization of milk, method of preparation of butter, cheese, khoa, paneer, yoghurt, cream, and shrikhand.

Suggested Readings:

Amlendu Chakrabarti: Handbook of Animal Husbandary"
Jagdish Prasad: Poultry Production and Management"
R.A. Singh: Poultry production"
Jagdish Prasad: Principle and practice of Dairy Farm Management"
B. Panda & B.R. Reddy: Feeding of poultry
Eiri Board of Consultant & Engineers: Hand Book of Dairy Farming
D. Ramaswamy: Dairy Technology Hand Book
P.N. Bhatt and B.U. Khan: Goat Production

Course Title: LAB-DAIRY MANAGEMENT AND PRODUCTS		
Course Code: RTUALLI	Credit:01	Marks: 30+70

Course outcomes

On completion of this course, the students will be able to:

1. Gain in-depth knowledge of dairy production and processing techniques.
2. Gain proficiency in quality control and food safety practices specific to the dairy industry.
3. Gain ability to operate and maintain dairy machinery and equipment.
4. Understand of the economic and environmental aspects of the dairy sector.

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	1	-	3	3	3	-	-	3	1
CO2	3	3	1	-	3	3	3	-	-	3	1
CO3	3	3	1	-	3	3	3	-	-	3	1
CO4	3	3	1	-	3	3	3	-	-	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

1. Visit to cow, buffalo, and goat farms and report preparation.
2. Study of system of housing for cattle and goats.
3. Visit to dairy plant and report submission.
4. Calculation of ration for cow, buffalo, and goat.
5. Preparation of various dairy products paneer, shrikhand, khoa etc.
6. Various adulterations and their tests in milk.

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Department of Rural Technology & Social Development
Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (CG)
Semester-wise syllabus for 4 Years UG Program, Session 2023-2024 onwards under NEP-2020
B. Sc. (Rural Technology)

SYLLABUS as per NEP- 2020		
B.Sc. II SEMESTER		
Course Title: POULTRY PRODUCTION TECHNOLOGY		
Course Code: RTUBTC1	Credit: 04	30+70
MAJOR/ Level 2	L3+P1	Marks:100

Course outcomes

On completion of this course, the students will be able to:

1. Study the Poultry production techniques and their management.
2. Identify the different types of Layer chickens and their management.
3. Establish entrepreneurship in this field.

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	1	-	2	3	-	3	3	3	1
CO2	3	3	1	-	2	3	-	3	3	3	1
CO3	3	3	1	-	2	3	-	3	3	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

Breeds and Nutrition: Identification and characteristics of important Indian and Exotic poultry breeds. Poultry nutrition- nutrients and their function, energy sources, vegetable and animal protein sources.

Poultry farm Management: Farm system, provisions for good housing, commercial chick, grower, broiler and layer management.

Breeding and products technology: Principles of breeding, breeding system, development of layer and broiler varieties. Assessment of egg quality, nutritive value of eggs, grading of eggs, processing and preservation of poultry products, egg and meat products.

Poultry health management: Symptoms, treatment/control and vaccination strategies of Viral disease (New castle disease, fowl pox, avian influenza, polyneuritis), Bacterial disease (Pullorum, fowl typhoid, fowl cholera, chronic respiratory disease), Parasitic disease (Coccidiosis) and Fungal disease (Mycotic pneumonia).

Other poultry species and marketing strategies: elementary knowledge of other poultry species- duck, quail, turkey, emu, geese and pigeon. Egg and meat marketing, distribution channel, exports.

Course Title: LAB- POULTRY PRODUCTION TECHNOLOGY		
Course Code: RTUBLC1	Credit:01	Marks: 30 + 70

Course outcomes

On completion of this course, the students will be able to:

1. Know the requirements of the main commercial poultry systems and deliver routine husbandry procedures and poultry production performance.
2. Learn about the poultry farming, site selection, and accommodation arrangements, handling of birds, feed and water.
3. Gain skill to maintain the health of birds from diseases, symptoms, culling, vaccination etc.

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Department of Rural Technology & Social Development
Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (CG)
Semester-wise syllabus for 4 Years UG Program, Session 2023-2024 onwards under NEP-2020
B. Sc. (Rural Technology)

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	1	-	2	3	-	3	3	3	1
CO2	3	3	1	-	2	3	-	3	3	3	1
CO3	3	3	1	-	2	3	-	3	3	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

1. Identification and morphological study of poultry breeds.
2. Assessment of quality of egg.
3. Study of housing system for poultry.
4. Study of feed and feeding equipments.
5. Study of various types of poultry diseases and treatment.
6. Visit to poultry farms and report preparation.

Suggested Readings:

Amlendu Chakrabarti: Handbook of Animal Husbandary"
Jagdish Prasad: Poultry Production and Management"
R.A. Singh: Poultry production

SYLLABUS as per NEP- 2020		
B.Sc. II SEMESTER		
Course Title: MICROBIAL TECHNOLOGY		
Course Code: RTUBTG1	Credit: 04	30+70
MINOR/ Level 2	L3+P1	Marks:100

Course outcomes

On completion of this course, the students would be able to

1. Learn historical background of microbiology.
2. Understand about the microorganism and their usefulness and also their harmful effects.
3. Learn economically important microorganisms and their functioning.

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	1	-	2	3	3	-	-	3	1
CO2	3	3	1	-	2	3	3	-	-	3	1
CO3	3	3	1	-	2	3	3	-	-	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

History of microbiology, Scope of microbiology, Viruses- general characters, Bacteria- general characters, Staining – types of staining, Gram staining technique, Economic importance of bacteria.

Mycoplasma- general characters. Actinomycetes – General characters, Cyanobacteria- general characters, Structure of heterocyst.

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Department of Rural Technology & Social Development
Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (CG)
Semester-wise syllabus for 4 Years UG Program, Session 2023-2024 onwards under NEP-2020
B. Sc. (Rural Technology)

Introduction to fermentation technology- Definition of fermentation, fermenter configuration, general aspects of production of Streptomycin, Amylase, Citric acid, Ethyl alcohol and vitamin B₁₂ by microbial fermentation.

Yeast and its uses, Uses of yeast and Yeast products, Microbiology of milk, production of yoghurt, butter milk, cheese, spoilage of food and techniques of food preservation.

Organic matter decomposition: composition of litter, microorganisms associated with organic matter decomposition, Organic compost, Factors affecting the composting-microorganisms.

Suggested Readings:

1. A text book of microbiology- R.C. Dubey and D.K. Maheshwari
2. Industrial Microbiology- A.H. Patel
3. Microbiology Fundamentals and Application- S.S. Purohit
4. General Microbiology- Powar and Daghinawala
5. Microbiology A System Approach- M.K. Cowan
6. Microbiology- L.M. Prescott

Course Title: LAB- MICROBIAL TECHNOLOGY		
Course Code: RTUBLG1	Credit:01	Marks:30+70

Course outcomes

On completion of this course, the students would be able to:

1. Know about the types of microorganisms in and around humans and metabolism and mechanism of microbial life.
2. Learn the important and diversified groups of micro-organisms in nature and their classification, and interactions within the microbial communities and between microorganism and plants and animals.
3. Knowledge about use of microbiological equipment and observations.

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	1	-	2	3	3	-	-	3	1
CO2	3	3	1	-	2	3	3	-	-	3	1
CO3	3	3	1	-	2	3	3	-	-	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

Laboratory course-

1. Study of basic instruments used in microbial techniques- Laminar air flow, oven, Incubator, Autoclave.
2. Gram staining technique for the identification of Gram +ve and Gram -ve bacteria.
3. Identification of Nostoc, Anabaena, Rhizopus, Yeast
4. Detection of adulteration in food items.
5. Study of various food preservative methods.

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Department of Rural Technology & Social Development
Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (CG)
Semester-wise syllabus for 4 Years UG Program, Session 2023-2024 onwards under NEP-2020
B. Sc. (Rural Technology)

SYLLABUS as per NEP- 2020		
B.Sc. II SEMESTER		
Course Title: HERBAL PRODUCTION TECHNOLOGY		
Course Code: RTUBTL1	Credit: 03	30+70
SEC/ LEVEL-2	L2+P1	Marks:100

Course outcomes

On completion of this course, the students will be able to:

1. Aware with the vast medicinal flora and their scientific role.
2. Gain technical confidence and skills to develop entrepreneurship.
3. Understand herbal production techniques of various herbal products.

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	1	-	2	3	-	3	3	3	1
CO2	3	3	1	-	2	3	-	3	3	3	1
CO3	3	3	1	-	2	3	-	3	3	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

Ayurvedic dosage form - Classification, Extraction- Kwatha, Pachana, Avaleha, Bhawwan, Putapka, Fermentation- Asava & Arista, Arka, Guggulu, Ghrita, Churna, Lepa, Vati and Gutikabhasma, Lauha.

Apparatus-Dolyantram, Svedaniyantram, Dhupayantram, Patanayantram, Adhaspatanyantram, Tirgapatanyantram, Vidhyadharyantrum, Putas, Mahaputa, Musha, Hamsapakayantram.

Utilisation and development of drugs from plants- Analgesic drugs, anti-inflammatory drugs, hypotensive drugs, antimalarial drugs, anti-cancer drugs, cardiovascular drugs, bronchodilatory drugs.

Herbal Preparations- Triphala churna, sitopaladi churna, Preparation of Avleha- Chyawanprash, Preparation of Asawas- Drakshasava, Preparation of Tooth powder, Preparation of beauty products.

Course Title: LAB- HERBAL PRODUCTION TECHNOLOGY		
Course Code: RTUBLL1	Credit:01	Marks: 30 + 70

Course outcomes

On completion of this course, the students will be able to:

1. Gain knowledge about the selection and processing of herbal drugs as raw materials for herbal drug preparation.
2. Learn about principles of traditional medicinal systems with method of preparation and standardization of crude and ayurvedic formulation.

Course Outcomes and their mapping with Program Outcomes:

COs	POs						PSOs				
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5

Department of Rural Technology & Social Development
Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (CG)
Semester-wise syllabus for 4 Years UG Program, Session 2023-2024 onwards under NEP-2020
B. Sc. (Rural Technology)

CO1	3	3	1	-	2	3	-	3	3	3	1
CO2	3	3	1	-	2	3	-	3	3	3	1

Weightage: 1-Slightly; 2-Moderately; 3-Strongly

1. Study of equipment used in preparation of ayurvedic formulations.
2. Preparation of Triphala/ Sitopaladi/ Lawanbhaskar churna
3. Preparation of tooth powder.
4. Preparation of Hair oil/pain killer oil.
5. Preparation of herbal products.
6. Preparation of Awaleha.

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