

# **Syllabus for Skill Enhancement Courses (SEC)**

**Offered by**

**Department of Rural Technology and Social Development**

**Session 2023-2024 onwards**

**Under NEP-2020**



**GURU GHASIDAS VISHWAVIDYALAYA**

**(A Central University)**

**Koni- Bilaspur 495009 Chhattisgarh**

<b>SKILL ENHANCEMENT COURSE (SEC): Credits: 03 (02 Theory + 01 Practical)</b> <b>Department of Rural Technology and Social Development</b>		
<b>Course Title: DAIRY MANAGEMENT AND PRODUCTS (Theory)</b>		
<b>Course Code: SECR01</b>  <b>SEC/ Level 1</b>	<b>Credits: 02</b>	<b>Total Marks:100</b> <b>Internal Assessments:</b> <b>FA 15 Marks (Time: 01 Hr)</b> <b>SA 15 Marks (Time: 01 Hr)</b> <b>End Semester Exam:</b> <b>70 Marks (Time 03 Hrs)</b>
<b>Semester: I</b>	<b>Pass Marks: 40% marks</b> <b>out of total 100 marks</b>	<b>Teaching Hrs: 24</b>

### 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. Understand various diseases and their management in cows and buffaloes.
5. Prepare various dairy products and enhance their skill for establishment of Dairy.

### Course:

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

**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 septicemia and 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 Chakerbarti 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

Continue...

**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	1	3	3	3	2	2	3	1
CO2	3	3	1	1	3	3	3	2	2	3	1
CO3	3	3	1	1	3	3	3	2	2	3	1
CO4	3	3	1	1	3	3	3	2	2	3	1
CO5	3	3	1	1	3	3	3	2	2	3	1

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

<b>SKILL ENHANCEMENT COURSE (SEC): Credits: 03 (02 Theory + 01 Practical)</b> <b>Department of Rural Technology and Social Development</b>		
<b>Course Title: LABORATORY COURSE OF DAIRY MANAGEMENT AND PRODUCTS</b>		
<b>Course Code: SECR02</b>  <b>SEC/Level 1</b>	<b>Credits: 01</b>	<b>Total Marks:100</b> <b>Internal Assessments:</b> <b>FA 15 Marks (Time: 01 Hr)</b> <b>SA 15 Marks (Time: 01 Hr)</b> <b>End Semester Exam:</b> <b>70 Marks (Time 03 Hrs)</b>
<b>Semester: I</b>	<b>Pass Marks: 40% marks out of total 100 marks</b>	<b>Teaching Hrs: 24</b>

### 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.
5. Prepare various dairy products and enhance their skill for establishment of Dairy.

### Course:

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.

### Suggested Readings:

Amlendu Chakerbarti 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 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	1	3	3	3	2	2	3	1
CO2	3	3	1	1	3	3	3	2	2	3	1
CO3	3	3	1	1	3	3	3	2	2	3	1
CO4	3	3	1	1	3	3	3	2	2	3	1
CO5	3	3	1	1	3	3	3	2	2	3	1

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

<b>SKILL ENHANCEMENT COURSE (SEC): Credits: 03 (02 Theory + 01 Practical)</b> <b>Department of Rural Technology and Social Development</b>		
<b>Course Title: HERBAL PRODUCTION TECHNOLOGY (Theory)</b>		
<b>Course Code: SECR03</b>  <b>SEC/Level 2</b>	<b>Credits: 02</b>	<b>Total Marks:100</b> <b>Internal Assessments:</b> <b>FA 15 Marks (Time: 01 Hr)</b> <b>SA 15 Marks (Time: 01 Hr)</b> <b>End Semester Exam:</b> <b>70 Marks (Time 03 Hrs)</b>
<b>Semester: II</b>	<b>Pass Marks: 40% marks</b> <b>out of total 100 marks</b>	<b>Teaching Hrs: 24</b>

### Course Outcomes

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

1. Aware about dosage forms in Ayurvedic system.
2. Understand vast medicinal flora and their scientific role.
3. Learn the use of various apparatus in preparation of herbal drugs.
4. Gain technical confidence and skills to develop herb- based drugs.
5. Understand herbal production techniques to develop various drugs.

### Course:

**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, Vidhyadharyantum, Putas, Mahaputa, Musha, Hamsapakayantram.

**Utilization 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.

### Reference Books

Medicinal plants of India Vol 1 & 2 ICAR by Kirtikar & Basu.  
Indigenous medicinal specialties: U.S. Narayan Rao  
Useful plant of Neotropical origin: Heing Brucher  
Cultivation and utilization of Aromatic plants: C.K. Atal and B.M. Kapoor  
Pharmacognocoy - Trease & Evans.  
Pharmacognocoy- Gokhale, Kokate & Purohit  
Cultivation and Utilization of Aromatic plants - L.K. Atal & B.M. Kapoor.  
Professional Pharmacy - Jain & Sharma.  
Aromatic Plants- Baby S. Skaria, P.P. Joy, G. Mathew, A. Joseph and R. Joseph  
Medicinal Plants- A. Kurian and M.A. Sankar  
Medicinal Plants Ethnobotanical Approach- P.C. Trivedi  
Aromatic Plants- Baby S. Skaria, P.P. Joy, G. Mathew, A. Joseph and R. Joseph

**Continue...**

**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	1	2	3	1	3	3	3	1
CO2	3	3	1	1	2	3	1	3	3	3	1
CO3	3	3	1	1	2	3	1	3	3	3	1
CO4	3	3	1	1	2	3	1	3	3	3	1
CO5	3	3	1	1	2	3	1	3	3	3	1

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

<b>SKILL ENHANCEMENT COURSE (SEC): Credits: 03 (02 Theory + 01 Practical)</b> <b>Department of Rural Technology and Social Development</b>		
<b>Course Title: LABORATORY COURSE OF HERBAL PRODUCTION TECHNOLOGY</b>		
<b>Course Code: SECR04</b>	<b>Credit: 01</b>	<b>Total Marks:100</b>
<b>SEC/Level 2</b>		<b>Internal Assessments:</b> <b>FA 15 Marks (Time: 01 Hr)</b> <b>SA 15 Marks (Time: 01 Hr)</b> <b>End Semester Exam:</b> <b>70 Marks (Time 03 Hrs)</b>
<b>Semester: II</b>	<b>Pass Marks: 40% marks out of total 100 marks</b>	<b>Teaching Hrs: 24</b>

### Course Outcomes

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

1. Understand equipment used in preparation of *Ayurvedic* formulations
2. Gain knowledge about the selection and processing of herbs as raw materials for herbal drug preparation.
3. Prepare drug formulations regularly used in *Ayurveda*
4. Learn about principles of traditional medicine systems with method of preparation and standardization of crude and *Ayurvedic* formulation.
5. Find job opportunities on the basis of knowledge of medicinal plants.

### Course:

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*.

### Reference Books

Medicinal plants of India Vol 1 & 2 ICAR by Kirtikar & Basu.  
 Indigenous medicinal specialties: U.S. Narayan Rao  
 Useful plant of Neotropical origin: Heing Brucher  
 Cultivation and utilization of Aromatic plants: C.K. Atal and B.M. Kapoor  
 Pharmacognocoy - Trease & Evans.  
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 Professional Pharmacy - Jain & Sharma.  
 Aromatic Plants- Baby S. Skaria, P.P. Joy, G. Mathew, A. Joseph and R. Joseph  
 Medicinal Plants- A. Kurian and M.A. Sankar  
 Medicinal Plants Ethnobotanical Approach- P.C. Trivedi  
 Aromatic Plants- Baby S. Skaria, P.P. Joy, G. Mathew, A. Joseph and R. Joseph

### 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	1	2	3	3	3	3	3	1
CO2	3	3	1	1	2	3	3	3	3	3	1
CO3	3	3	1	1	2	3	3	3	3	3	1
CO4	3	3	1	1	2	3	3	3	3	3	1
CO5	3	3	1	1	2	3	3	3	3	3	1

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

SKILL ENHANCEMENT COURSE (SEC): Credits: 03 (02 Theory + 01 Practical)		
Department of Rural Technology and Social Development		
Course Title: BASICS OF MUSHROOM PRODUCTION (Theory)		
Course Code: SECR05  SEC/Level 2	Credits: 02	Total Marks:100 Internal Assessments: FA 15 Marks (Time: 01 Hr) SA 15 Marks (Time: 01 Hr) End Semester Exam: 70 Marks (Time 03 Hrs)
Semester: III	Pass Marks: 40% marks out of total 100 marks	Teaching Hrs: 24

### Course Outcomes

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

1. Identify edible and non-edible mushrooms.
2. Learn mushroom production techniques and their management.
3. Build up the efficiency of mushroom production, management and marketing.
4. To be skill full in post-harvest handling of mushrooms.
5. Create employability opportunities in mushroom sector.

### Course:

**Introduction:** Distribution, History and scope of Mushrooms, Characteristic features of Basidiomycotina fungi.

**Identification:** of commonly grown mushroom species, Edible mushroom and their characteristics, Nutritional value of Mushrooms, Features of poisonous mushrooms, Medicinal mushrooms and their properties.

**Spawn production technique:** Equipments, mother culture preparation technique and their management.

**Production Techniques:** of Oyster Mushroom, Paddy Straw Mushroom, White Button Mushroom and White Milky Mushroom.

**Post-harvest handling:** of mushrooms, Problems related to mushroom production, Management of pests and diseases.

### Suggested Readings:

The Mushroom Identifier- David Pegler & B. Sproner.

Mushroom Cultivation- B. Tripathi & H.P. Shukla

Mushroom Growing- S.C. Day

### 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	1	2	3	3	1	1	3	1
CO2	3	3	1	1	2	3	3	1	1	3	1
CO3	3	3	1	1	2	3	3	1	1	3	1
CO4	3	3	1	1	2	3	3	1	1	3	1
CO5	3	3	1	1	2	3	3	1	1	3	1

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



<b>SKILL ENHANCEMENT COURSE (SEC): Credits: 03 (02 Theory + 01 Practical)</b> <b>Department of Rural Technology and Social Development</b>		
<b>Course Title: LABORATORY COURSE OF BASICS OF MUSHROOM PRODUCTION</b>		
<b>Course Code: SECR06</b>	<b>Credit: 01</b>	<b>Total Marks:100</b>
<b>SEC/Level 2</b>		<b>Internal Assessments:</b> <b>FA 15 Marks (Time: 01 Hr)</b> <b>SA 15 Marks (Time: 01 Hr)</b> <b>End Semester Exam:</b> <b>70 Marks (Time 03 Hrs)</b>
<b>Semester: III</b>	<b>Pass Marks: 40% marks out of total 100 marks</b>	<b>Teaching Hrs: 24</b>

### Course Outcomes

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

1. To identify edible types of mushrooms.
2. Understand spawn production techniques and mushroom hut management.
3. Gain the knowledge of cultivation of different types of edible mushrooms
4. To manage diseases and pests of mushrooms
5. To evolve themselves towards self-employment and income generation.

### Course:

1. Identification of different mushroom species.
2. Equipment's used in mushroom production.
3. Culture preparation and Spawn preparation.
4. Different types of mushroom production.
5. Different types of Mushroom bed preparation.
6. Mushroom hut management.
7. Study of different types of pests and diseases of mushroom.

### Suggested Readings:

The Mushroom Identifier- David Pegler & B. Sproner.

Mushroom Cultivation- B. Tripathi & H.P. Shukla

Mushroom Growing- S.C. Day

### 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	1	2	3	3	1	1	3	1
CO2	3	3	1	1	2	3	3	1	1	3	1
CO3	3	3	1	1	2	3	3	1	1	3	1
CO4	3	3	1	1	2	3	3	1	1	3	1
CO5	3	3	1	1	2	3	3	1	1	3	1

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