

**Wollo University, College of Agriculture**

**Department of animal science**

**Course Title: Skin and Hides Management**

**Course code:** AnPS3105

**Pre requisite: None**

**Credit hours: Two**

**Mode of delivery: Parallel**

**Course Instructor: Demerech A.**

**Course Description**

The students shall learn the contribution of skin and hide to the national economy. Understand anatomical structure and chemical composition of hide and skin; damages of skin in a live and killed animals; acquire knowledge on flying, storing and transportation.

**Course objectives**

Upon the successful completion of the course, students will be able:

- To explain the contribution of skin and hide to the national as well world economy;
- To explain anatomical structures and composition of hides and skins ;
- To understand the damages of hides and skins in a live and killed animals;
- To describe the possible factors that contributes for the damage of hide and skin;
- To clarify the preparation of skin and hide;
- To deliver the principles of preservation of skin and hide;
- To describe the storage and transportation of hide and skin.

**COURSE CONTENTS**

**CHAPTER ONE: Introduction about hide and skins**

√ Definitions/Terminology

- ✓ Status of hide and skin in Ethiopia /world
- ✓ Unique features of Ethiopian hide and skin
- ✓ Source of hide and skins
- ✓ Utilities of hide and skin

## **CHAPTER TWO: Components of the mammalian skin and hide**

Physical characteristics of hides and skins

- ✓ Histological structure of hides and skins(Epidermis, Dermis ,Hypodermis)
- ✓ Chemical composition of hides and skins
- ✓ Overall Chemical Composition
- ✓ Protein Composition of Hides and Skins

## **CHAPTER THREE: Hide and skin production system and Marketing**

Hide and skins production,

Hide and skin marketing

Constraints to leather production and marketing (Quality of raw material and Quality of hide and skin supplies)

## **CHAPTER FOUR: Defects in Hide and Skins**

### **Ante mortem/ pre-slaughter defects of hides and skins**

(Natural defects of hides and skins (Breed, Climate, nutrition,sex and Age))

Damages and defects on the live animal (Mechanical damages, Diseases caused damages and Parasite caused damages)

### **B. Peri-slaughter (Defects at slaughter house) of hide and skin**

(Bruise, Rubbed grain, improper bleeding, Poor pattern /Irregular shape, Flay cuts)

## **C .Defects after Slaughtering/ post slaughter defects**

(Preservation defects, Storage defect, Transportation damages/defects)

## **CHAPTER FIVE: Preservation of Hides and skins**

Objectives of preservation ,Principles of preservation , putrefaction, causes of spoilage , Methods of Preservation of Hides and Skins ;Preservation by( Drying, by Salting)

## **CHAPTER SIX: Hide and Skin Processing**

- √ Introduction
- √ Types of tanning (Traditional versus Modern)
- √ Stages in leather tanning
- √ Roles of enzymes in leather tanning
- √ Leather production processes
- √ Uses of leather

## **CHAPTER SEVEN: Storage and Transportation of Hide and Skin**

Storage (Storage of wet salted hides and skins)  
Transportation of hide and skin

## **CHAPTER EIGHT: Quality of Hide and skin**

Sorting  
Grading  
Grading by quality  
Grading standards (parameters for grading)

## **CHAPTER NINE: Leather industry, environmental impacts and mitigation opportunities**

- ☐ Chemicals, waste water and worker health hazards

## **Mode of delivery systems**

- Lecture, group discussion, oral audio, brain storming, question and answering, video show

## **Course Assessment Methods**

 **Formative assessment (Continuous assessment: > or =50%**  
(Test/ quizzes , Assignments (group assignments) and mid exam

 **Final written exam: < or =50%**

## **REFERENCES**

ESAP, 1998.cattle branding: animal curative or skin destructive? case study around Bako.pp119-122

Davassy, T.J and Argaw G., 1998.Hides and skins improvement handbook. MOA/ FAO

Mann, I., 1962. Hide and Skin and glue stock .In: animal by-products processing and utilization.pp 80-137

ESGPIP (Ethiopian sheep and goat productivity improvement program, USAID), 2009. Common defects of sheep and goat skins in Ethiopia and their causes. Technical bulletin No, 19.

Zelege T., 2009. Sheep and Goat by products, In; sheep and Goat production handbook for Ethiopia,(ESGPIP).

MOARD (Ministry of Agriculture and Rural Development), 2007. Hides and skins, Volume k.In; livestock development master plan study.

