



**JOMO KENYATTA UNIVERSITY  
OF  
AGRICULTURE AND TECHNOLOGY**

**P. O. BOX 62000-00200, NAIROBI TEL: (067) 52711  
SCHOOL OF NATURAL RESOURCES AND ANIMAL SCIENCES  
deansonras@jkuat.ac.ke**

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**NEW PROGRAMMES (2019) - DEPARTMENT OF ANIMAL SCIENCES**

**BACHELOR OF SCIENCE IN LEATHER TECHNOLOGY**

**Entry requirements**

Have a minimum aggregate of C+ (Plus) in Kenya Certificate of Secondary Education (KCSE) and should have a minimum grade of C (plain) in each of the following subjects: Biology, Chemistry, Mathematics/Physics/Geography OR C (plain) in each of the following subjects: Biological Sciences, Physical Sciences, Mathematics/Geography and C (plain) in English/Kiswahili, or 3<sup>rd</sup> Group II subject, or a Group III subject, or any Group IV or any Group V.

Alternatively, admission may also be granted to candidates with a Diploma in Animal Health/Animal Husbandry or Production/Diploma in Agriculture and related disciplines from a recognized institution or its equivalent.

**Duration**

4 Year programme

## COURSE STRUCTURE

### YEAR 1

#### FIRST YEAR

	CODE	TITLE	HOURS
1.	HRD 2101	Communication skills	45
2.	AHS 2101	AAP 2101 introduction to animal health, production and processing	45
3.	HRD 2102	Development Studies and Social Ethics	45
4.	HRD 2103	General Economics	45
5.	SMA 2160	Mathematics –I	45
6.	SPH 2160	Physics-I	45
7.	SCH 2107	Inorganic Chemistry	45
8.	SMA 2161	Mathematics-II	45
9.	SPH 2161	Physics-II	45
10.	SCH 2106	Physical Chemistry	45
11.	SCH 2108	Organic Chemistry	45
12.	SBT 2120	General Microbiology	45
13.	SBH 2111	Biochemistry I	45
14.	ALT 2101	Animal Anatomy & Physiology	45
15.	ALT 2102	Introduction To Leather Manufacture	45
16.	ICS 2110	Information Technology I	45
17.	SZL 2111	HIV/AIDS	45

**YEAR 2****SECOND YEAR**

	<b>CODE</b>	<b>TITLE</b>	<b>HOURS</b>
1.	ALT 2201	Instrumental Methods Of Analysis	45
2.	ALT 2202	Fundamental of engineering	45
3.	STA 2160	STA 2160 Statistics	45
4.	ALT 2203	Animal Parasitology for leather processing	45
5.	ALT 2204	Skin diseases	45
6.	ICS 2215	Information technology II	45
7.	ALT 2205	Theory Of Skin Proteins And Pre-Tanning Processes	45
8.	ALT 2206	Technology Of Heavy Leather Manufacture	45
9.	ALT 2207	Theory And Practice Of Chrome And Inorganic Tannages	45
10.	ALT 2208	Theory And Practice Of Vegetable And Organic Tannages	45
11.	ALT 2209	Theory Of Material Testing Of Leathers – I	45
12.	ALT 2210	Polymer Science	45
13.	ALT 2211	Technology Of Light Leather Manufacture	45
14.	ALT 2212	Theory And Practice Of Post Tanning Processes	45
15.	ALT 2213	Theory Of Material Testing Of Leathers – II	45
16.	ALT 2214	Principles Of Unit Operations And Unit Processes In Leather And Leather Chemicals Manufacture	45
17.	ALT 2215	Tannery Practice: attachment	45

### YEAR 3

### THIRD YEAR

	<b>CODE</b>	<b>TITLE</b>	<b>HOURS</b>
1.	ALT 2301	Chemical Engineering	45
2.	ALT 2302	Environmental Science And Engineering For Leather Sector	45
3.	ALT 2304	Leather Goods And Garments Technology	45
4.	ALT 2305	Leather Machineries	45
5.	ALT 2306	Theory And Practice Of Leather Finishing	45
6.	ALT 2307	Leather Footwear Technology	45
7.	ALT 2308	Process Economics And Industrial Management For Leather Sector	45
8.	ALT 2309	CAD/CAM For Leather Products Design And Manufacture	45
9.	ALT 2310	Consumer Behavior And Business Orientation	45
10.	AAP 2308	Research Methodology	45
11.	ALT 2311	Eco-Benign Options For Leather Processing	45
12.	ALP 2312	Environmental Impact & Risk Assessment	45
13.	ALT 2312	Raw technology I	45
14.	ALT 2313	Raw technology II	45
15.	ALT 2314	Leather Products Machinery	45
16.	AAP 2313	Research Project I	45
17.	ALT 2315	Industrial attachment	45

## YEAR 4

### FOURTH YEAR

	CODE	TITLE	HOURS
1.	ALT 2401	Total quality management	45
2.	ALT 2402	Safety In Leather Industries	45
3.	ALT 2403	Science And Technology Of Leather Auxiliaries	45
4.	ALT 2404	Science And Technology Of Leather Supplements And Synthetics	45
5.	ALT 2405	Technology Of Animal And Tannery By Products Utilization	45
6.	ALT 2405	Leather Bio Technology And Its Application In Leather	45
7.	ALT 2406	Research Project II [2 units]	45
8.	ALT 2407	Leather Marketing	45
9.	ECE 2220	Sanitation and Waste Control	45
10.	ALT 2408	International Business management	45
11.	ALT 2409	Quality assurance in Leather Industry	45
12.	ALT 2410	Plant layout and tannery operations	45
13.	ALT 2411	Principles of Accounting	45
14.	ALT 2412	Innovation, Technology And Intellectual Property Rights	45
15.	HRD 2401	Entrepreneurship	45

## **BACHELOR OF SCIENCE IN LIVESTOCK PRODUCT PROCESSING AND TECHNOLOGY**

### **Entry requirements**

Have a minimum aggregate of C+ (Plus) in Kenya Certificate of Secondary Education (KCSE) and should have a minimum grade of C (plain) in each of the following subjects: Biology, Chemistry, Mathematics/Physics/Geography OR C (plain) in each of the following subjects: Biological Sciences, Physical Sciences, Mathematics/Geography and C (plain) in English/Kiswahili, or 3<sup>rd</sup> Group II subject, or a Group III subject, or any Group IV or any Group V.

Alternatively, admission may also be granted to candidates with a Diploma in Animal Health/Animal Husbandry or Production/Diploma in Agriculture and related disciplines from a recognized institution or its equivalent.

### **Duration**

4 Year programme

## **COURSE STRUCTURE**

### **YEAR ONE**

	<b>CODE</b>	<b>TITLE</b>	<b>HOURS</b>
18.	HRD 2101	Communication skills	45
19.	AAP 2101	Introduction to animal health, production and processing	45
20.	HRD 2102	Development Studies and Social Ethics	45
21.	HRD 2103	General Economics	45
22.	SMA 2160	Mathematics –I	45
23.	SPH 2160	Physics-I	45
24.	SCH 2107	Inorganic Chemistry	45
25.	SMA 2161	Mathematics-II	45
26.	SPH 2161	Physics-II	45
27.	SCH 2106	Physical Chemistry	45
28.	SCH 2108	Organic Chemistry	45
29.	SBT 2120	General Microbiology	45
30.	SBH 2111	Biochemistry I	45
31.	APP 2101	Animal Anatomy	45
32.	APP 2102	Animal Physiology	45
33.	ICS 2110	Information Technology I	45
34.	SZL 2111	HIV/AIDS	45

## SECOND YEAR

	<b>CODE</b>	<b>TITLE</b>	<b>HOURS</b>
1.	STA 2160	Statistics	45
2.	ICS 2215	Information Technology II	45
3.	APP 2201	Parasitology in Livestock Product Processing	45
4.	ALT 2204	Skin Diseases	45
5.	AFS 2210	Microbiology of Food And Non-Food Livestock Products	45
6.	AFS 2111	Fundamentals of Food Chemistry	45
7.	AFS 2315	Analysis of Food and Feed	45
8.	APP 2202	Fundamentals of Food Engineering	45
9.	APP 2203	Principles of Electrical And Electronic Engineering	45
10.	APP 2204	Food Process Engineering	
11.	AFP 2430	Principles of Food Processing And Preservation	45
12.	AAP 2204	Principles of Animal Nutrition And Feeding	45
13.	AAP 2206	Animal Health	45
14.	AAP 2305	Animal Production	45
15.	APP 2205	Fundamentals in Human Nutrition	45
16.	APP 2206	Food Toxicology	45
17.	AAP 2207	Internal Attachment	45

**THIRD YEAR**

	<b>CODE</b>	<b>TITLE</b>	<b>HOURS</b>
1.	AAP 2308	Research Methodology	45
2.	AFS 2310	Foundation in dairy Science	45
3.	AFS 2403	Dairy Technology II	45
4.	APP 2301	Unit Operations in Dairy Processing	45
5.	APP 2302	Public Health and Zoonoses	45
6.	APP 2303	Meat animals and Abattoir Practices	45
7.	APP 2304	Fresh meat Technology	45
8.	APP 2305	Processed meat technology	45
9.	APP 2306	Poultry products Technology	45
10.	APP 2307	Processing of Aquatic products	
11.	AAP 2408	Processing and preservation of Livestock by-products	45
12.	AAP 2313	Research project I	45
13.	APP 2308	Epidemiology of Food Safety	45
14.	APP 2309	Apiculture and Honey Processing	45
15.	ECE 2220	Sanitation and Waste management	45
16.	AAP 2307	Ecology And Environmental Management	45
17.	APP 2310	Industrial Attachment	8 weeks



**FOURTH YEAR**

	<b>CODE</b>	<b>TITLE</b>	<b>HOURS</b>
1.	ALT 2102	Introduction To Leather Manufacture	45
2.	ALT 2312	Raw Stock Technology I	45
3.	ALT 2313	Raw Stock Technology II	45
4.	ALT 2410	Plant Layout and Tannery Operations	45
5.	ALT 2411	Principles of Accounting	45
6.	APP 2401	Biotechnology of Foods of Animal Origin	45
7.	AAP 2409	Food Quality Assurance and Sensory Evaluation	45
8.	APP 2402	Food Packaging Technology	45
9.	APP 2403	Food Safety Policy, Standards and Laws	
10.	AAP 2404	Animal Welfare, Ethics and Law	45
11.	AAP 2402	Research Project –II [2 Units]	90
12.	AAP 2411	Agribusiness Management	45
13.	ALT 2309	Consumer Behaviour and Business Orientation	45
14.	ALP 2311	Environmental Impact & Risk Assessment	45
15.	HRD 2401	Entrepreneurship Skills	45

## **BACHELOR OF SCIENCE IN WILDLIFE MANAGEMENT**

### **Entry requirements**

Have a minimum aggregate of C+ (Plus) in Kenya Certificate of Secondary Education (KCSE) and should have a minimum grade of C (plain) in each of the following subjects: Biology, Chemistry, Mathematics/Physics/Geography OR C (plain) in each of the following subjects: Biological Sciences, Physical Sciences, Mathematics/Geography and C (plain) in English/Kiswahili, or 3<sup>rd</sup> Group II subject, or a Group III subject, or any Group IV or any Group V.

### **Duration**

4 Year programme

## COURSE STRUCTURE

UNIT CODE	1 <sup>ST</sup> YEAR	HRS	UNITS
HRD 2101	Communication studies	45	1
HRD 2102	Development studies and social ethics	45	1
HRD 2103	General economics	45	1
WM 2101	Principles of management	45	1
WM 2102	Basic botany	45	1
WM 2103	Basic zoology	45	1
WM 2104	Invertebrate Zoology	45	1
WM 2105	Animal genetics and Evolution	45	1
WM 2106	Basic Physic	45	1
WM 2107	Basic Chemistry	45	1
WM 2108	Basic mathematics	45	1
WM 2109	Introduction to natural resources management	45	1
WM 2110	Introduction to natural history of East Africa flora and fauna	45	1
WM 2111	Introduction to tourism: concepts, theories and systems	45	1
WM 2112	Tourism, environment and development	45	1
WM 2113	Museum monuments and heritage	45	1
SZL 2111	HIV/AIDS	45	1
<b>TOTAL</b>			<b>17</b>

UNIT CODE	2 <sup>ND</sup> YEAR	HRS	UNITS
WM 2201	Principles of ecology	45	1
WM 2202	Forest ecology	45	1
WM 2203	Plant ecology and taxonomy	45	1
WM 2204	Ecology of inland waters	45	1
WM 2205	Marine ecology	45	1
WM 2206	Culture, leisure and recreation	45	1
WM 2207	Tourism planning and development administration	45	1
WM 2208	Ornithology	45	1
WM 2209	Mammalogy	45	1
WM 2210	Herpetology	45	1
WM 2211	Entomology for wildlife	45	1
WM 2212	Introduction to soil science	45	1
WM 2213	Wetland conservation	45	1
WM 2214	Society and conservation	45	1
WM 2215	Biostatistics for natural resources	45	1
WM 2216	Information technology for natural resources	45	1
WM 2217	Wildlife management	45	1
<b>TOTAL</b>			

<b>UNIT CODE</b>	<b>3<sup>RD</sup> YEAR</b>	<b>HRS</b>	<b>UNITS</b>
WM 2301	Wildlife diseases and pathology	45	1
WM 2302	Comparative vertebrate physiology	45	1
WM2303	Environmental physiology	45	1
WM 2304	Wildlife nutrition	45	1
WM 2305	Range management	45	1
WM 2306	Planning of conservation areas	45	1
WM 2307	Tourism policy and planning	45	1
WM 2308	Research methodology	45	1
WM 2309	Theory and application of remote sensing	45	1
WM 2310	Engineering for wildlife management	45	1
WM 2311	Sociology	45	1
WM 2312	Economics and utilization of wildlife resources	45	1
WM 2313	Environmental policy law and professional ethics	45	1
WM 2314	Principles of Geographical information systems (GIS)	45	1
WM2315	Research project 1	45	2
WM 2316	Field attachment	8wks	1
<b>TOTAL</b>			<b>17</b>

<b>UNIT CODE</b>	<b>4<sup>TH</sup> YEAR</b>	<b>HRS</b>	<b>UNITS</b>
WM 2401	Tourism marketing and promotion	45	1
WM 2402	Community based tourism	45	1
WM 2403	Economics of Tourism	45	1
WM 2404	Environmental impact assessment and audit	45	1
WM 2405	Tourism Operation for Destination Development	45	1
WM 2406	Ecotourism and Tourism Typologies	45	1
WM 2407	Human Resource Management for Tourism Development	45	1
WM 2408	Cross cultural communication	45	1
WM 2409	Hospitality management	45	1
WM 2410	Travel management	45	1
WM 2411	Project Planning and Management	45	1
WM 2412	Finance Management in Tourism	45	1
WM 2413	Contemporary issues in Wildlife management	45	1
WM 2414	Tourism Field and case studies	45	1
WM 2415	Research project II	45	1
<b>TOTAL</b>			<b>17</b>