About the programme:

Bachelor of Science in Applied biology is designed to promoting the discovery and application of scientific knowledge in a manner that prepares the students to contribute effectively, intellectually and ethically as citizens of a dynamic scientific community. Students trained in the department find placement in bio-medical research, environmental and health institutions. They can also find suitable jobs in the food and beverage, pharmaceutical industries, educational institutions and as technical sales representatives besides self-employment.

The curriculum is need-driven and strives to offer a hands-on training in scientific skills to fill the gap between technologists and researchers/professionals in various biological disciplines.

Programme options:

Microbiology

Students majoring in this option become versed in the role of microbes in nature, including nitrogen fixation, photosynthesis, degradation of pollutants infectious diseases, food spoilage, and disruption of industrial processes; a wide area of genetics, and genetic engineering, its applications in agriculture, medicine and biotechnology and includes practical techniques in these disciplines.

Bio-management and utility

This option is designed to stimulate students to conceptualize the dynamic fields of Economic Botany and Applied Zoology. Key and unanswered aspects of biodiversity conservation, bio-management and utility are addressed. Emphasis is on the understanding of animals and plants in relation to their environment and application of zoological and botanical knowledge to problems such as pest control, cancer research, pollutants in food chains and beneficial uses in agriculture, herbal medicine, and plant.

Economic Botany

The Economic Bótany degree provides a distinct body of knowledge suitable for the understanding of plants in relation to their uses. The emphasis throughout is on the application of botanical knowledge to Agriculture, herbal medicine, and plant genetic resources conservation and biodiversity management.

Zoology

The Zoology degree provides a unified and distinct body of knowledge suitable for the understanding of animals in relation to their environment. The emphasis throughout is on the application of zoological knowledge to problems such as pest control, cancer research, pollutants in food chains and biodiversity conservation.

Target group

High School or A-level school leavers, certificate and ordinary and Higher Diploma holders in biological sciences and biomedical sciences who would like to acquire or learn scientific skills in various biological disciplines in the programme.

Admission Requirements

Minimum requirements for admission to the Applied Biology Programme is a C + in Biology at KCSE, or equivalent qualification and a C pass in Chemistry or Mathematics OR grade B in the pre-university General Biology course. In addition, the student must satisfy the minimum entrance requirements for the Kenya Methodist University.

Programme Structure

YEAR 1 Semester 1 Core Courses		
BOTN 101	General Botany	3
MBIO 101	General Microbiology	
Z00L 101	Invertebrate Zoology	3
Z00L 105	Vertebrate Zoology	3
University Con	nmon Courses (Compulsory)	
THEO 111	Christian Beliefs	3
COMM 111	Communication Skills	3
Total		18
Semester 2		
Core courses		
CHEM 101	General Chemistry	3
MBIO 106	Laboratory Methods & Techniques	3
BIOL 115	General Ecology	3
Z00L 110	Cell Biology and Genetics	3
University Con	nmon Courses (Compulsory)	
COMP 100	Computer Applications	3
MATH 130	Basic Statistics	3
Total		18

YEAR 2 Semester 1 Core Courses			YEAR 4 Semester 1 Core courses		
BIOC 201	Biochemistry	3	BIOL 450	Research Project	6
MATH 231	Biostatistics	3	BOTN 410	Plant Cell & Tissue Culture	3
BOTN 210	Plant Morphology and Anatomy	3	MBIO 415	General Virology	3
Z00L 210	Animal Anatomy and Physiology	3	MBIO 420	Microbial Physiology and Genetics	3
	nmon Courses (Compulsory)	3	Electives (One		,
BUSS 114	Entrepreneurship	3	BIOL 415	Biodiversity Conservation	3
SOST 131	Introduction to Sociology	3	ECOT 440	Ecotourism Development and Managemen	
Total	introduction to sociology	18	BOTN 420	Pharmacognosy	3
Semester 2		10	Total	Tharmacognosy	18
Core Courses			Semester 2		10
BIOL 225	Evolutionary Biology	3	Core courses		
BOTN 201	Plant Biochemistry and Physiology	3	BIOL 425	Biotechnology & Development	3
BOTN 205	Plant Systematics	3	MBIO 410	Soil Microbiology	3
MBIO 205	Advanced Microbiology	3	MBIO 430	Epidemiology	3
ENVI 201	Environmental Science	3	MBIO 435	Food Microbiology	3
	nmon Courses (Compulsory)	,	MBIO 440	General Mycology	3
HSCI 225	HIV/AIDS	3	Electives (One		•
Total	1111771105	18	BIOL 405	Applied Ecology	3
			Z00L 435	Integrated Pest Management	3
Microbiolo	av Option		Total		18
YEAR 3	,, opo				
Semester 1			Economic B	otany Option	
Core courses			YEAR 3		
Z00L 201	Parasitology	3	Semester 1		
BIOL 330	Biological Seminars	3	Core courses		
MBIO 310	Immunology	4	Z00L 201	Parasitology	3
MIDIO 3 IO					3
MBIO 310	Pathogenic Microbiology	3	BIOL 330	Biological Seminars	,
		3		Biological Seminars Plant Genetic Resources	3
MBIO 305	Pathogenic Microbiology Microbiology and Human Welfare		BIOL 330		3
MBIO 305 MBIO 315	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology	3	BIOL 330 BOTN 310 BOTN 315 NARS 362	Plant Genetic Resources Agro forestry Rangeland Resources	3 3 3
MBIO 305 MBIO 315 Electives (One	Pathogenic Microbiology Microbiology and Human Welfare	3 3 3	BIOL 330 BOTN 310 BOTN 315	Plant Genetic Resources Agro forestry Rangeland Resources	
MBIO 305 MBIO 315 Electives (One MBIO 320	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology	3	BIOL 330 BOTN 310 BOTN 315 NARS 362	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology	3
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology	3 3 3	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy	3
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology Plant Genetic Resources	3 3 3 19	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany	3 3 3
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2	Pathogenic Microbiology Microbiology and Human Welfare) Nolecular and Cellular Biology Plant Genetic Resources General Entomology	3 3 3 19	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy	3 3 3 3
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques	3 3 3 19	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany	3 3 3
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques Research Methodology	3 3 3 19 3 3 3	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total Semester 2	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany	3 3 3 3
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 335 BIOL 301 BIOC 301	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques Research Methodology Medical Biochemistry	3 3 3 19	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total Semester 2 Core courses	Plant Genetic Resources Agro forestry Rangeland Resources) Molecular and Cellular Biology Comparative Anatomy Aquatic Botany Microbiology and Human Welfare	3 3 3 19
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BIOC 301 MBIO 325	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques Research Methodology Medical Biochemistry Host-Microbe Interaction	3 3 3 19 3 3 3	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total Semester 2 Core courses ZOOL 205	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany Microbiology and Human Welfare General Entomology	3 3 3 19
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BIOC 301 MBIO 325 Electives (One	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques Research Methodology Medical Biochemistry Host-Microbe Interaction	3 3 19 3 3 3 3 3	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total Semester 2 Core courses ZOOL 205 BIOL 335	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany Microbiology and Human Welfare General Entomology Biological Techniques	3 3 3 19
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BIOC 301 MBIO 325 Electives (One BOTN 330	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques Research Methodology Medical Biochemistry Host-Microbe Interaction	3 3 3 19 3 3 3 3 3	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total Semester 2 Core Courses ZOOL 205 BIOL 335 BIOL 301	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany Microbiology and Human Welfare General Entomology Biological Techniques Research Methodology	3 3 3 19
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BIOC 301 MBIO 325 Electives (One BOTN 330 ZOOL 335	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques Research Methodology Medical Biochemistry Host-Microbe Interaction	3 3 3 19 3 3 3 3 3 3	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BOTN 330	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany Microbiology and Human Welfare General Entomology Biological Techniques Research Methodology Plant Pathology	3 3 3 19
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BIOC 301 MBIO 325 Electives (One BOTN 330 ZOOL 335 Total	Pathogenic Microbiology Microbiology and Human Welfare Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques Research Methodology Medical Biochemistry Host-Microbe Interaction Plant Pathology Wildlife Biology	3 3 3 19 3 3 3 3 3	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BOTN 330 BOTN 340	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany Microbiology and Human Welfare General Entomology Biological Techniques Research Methodology Plant Pathology Plant Reproductive Biology	3 3 3 19
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BIOC 301 MBIO 325 Electives (One BOTN 330 ZOOL 335 Total 2-3 Months La	Pathogenic Microbiology Microbiology and Human Welfare) Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques Research Methodology Medical Biochemistry Host-Microbe Interaction) Plant Pathology Wildlife Biology boratory Attachment	3 3 3 19 3 3 3 3 3 3 3	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BOTN 330 BOTN 340 Electives (One	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany Microbiology and Human Welfare General Entomology Biological Techniques Research Methodology Plant Pathology Plant Reproductive Biology	3 3 3 19
MBIO 305 MBIO 315 Electives (One MBIO 320 BOTN 310 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BIOC 301 MBIO 325 Electives (One BOTN 330 ZOOL 335 Total	Pathogenic Microbiology Microbiology and Human Welfare Molecular and Cellular Biology Plant Genetic Resources General Entomology Biological Techniques Research Methodology Medical Biochemistry Host-Microbe Interaction Plant Pathology Wildlife Biology	3 3 3 19 3 3 3 3 3 3	BIOL 330 BOTN 310 BOTN 315 NARS 362 Electives (One MBIO 320 ZOOL 305 BOTN 345 MBIO 315 Total Semester 2 Core courses ZOOL 205 BIOL 335 BIOL 301 BOTN 330 BOTN 340	Plant Genetic Resources Agro forestry Rangeland Resources Molecular and Cellular Biology Comparative Anatomy Aquatic Botany Microbiology and Human Welfare General Entomology Biological Techniques Research Methodology Plant Pathology Plant Reproductive Biology	3 3 3 19

Z00L 325 Z00L 335	Hydrobiology Wildlife Biology	3	Semester 2 Core courses			BOTN 310 MBIO 320	Plant Genetic Resources Molecular and Cellular Biology	3
MBIO 325	Host-Microbe Interaction	3	Z00L 205	General Entomology	3	Electives (One)		
Total		18	BIOL 335	Biological Techniques	3	BOTN 315	Agro forestry	3
			BIOL 301	Research Methodology	3	NARS 362	Rangeland Resources	3
	oratory Attachment		Z00L 325	Hydrobiology	3	MBIO 315	Microbiology & Human Welfare	
BIOL 499	Attachment	3	ZOOL 335 Electives (One)	Wildlife Biology	3	ZOOL 305 Total	Comparative Anatomy	3 18
YEAR 4			Z00L 330	Ornithology	3	Semester 2		
Core courses			MBIO 325	Host-Microbe Interaction	3	Core courses		
BIOL 450	Research Project	6	BOTN 330	Plant Pathology	3	Z00L 205	General Entomology	3
BOTN 410	Plant Cell & Tissue Culture	3	Z00L 320	Advanced Entomology	3	BIOL 335	Biological Techniques	3
BIOL 415	Biodiversity Conservation	3	Total		18	BIOL 301	Research Methodology	3
ECOT 440	Ecotourism Development &					BOTN 330	Plant Pathology	3
	Management	3		oratory Attachment		Z00L 335	Wildlife Biology	3
Electives (One)			*BIOL 499	Attachment	3	Electives (One)		
Z00L 410	Insect Anatomy & Physiology	3				Z00L 325	Hydrobiology	3
Z00L 420	Ichthyology	3	YEAR 4			Z00L 330	Ornithology	3
Z00L 425	Ethnology	3	Semester 1			MBIO 325	Host-Microbe Interaction	3
Total		18	Core courses		_	Z00L 315	Vertebrate Histology	3
Semester 2			BIOL 450	Research Project	6	Total		18
Core courses	District O. D I	2	BIOL 415	Biodiversity Conservation	3		oratory Attachment	,
BIOL 425	Biotechnology & Development		ECOT 440	Ecotourism Development &		*BIOL 499	Attachment	3
MBIO 410	Soil Microbiology	3	7001 410	Management 3	2	YEAR 4		
BIOL 405	Applied Ecology	3	Z00L 410	Insect Anatomy & Physiology	3	Semester 1		
BOTN 425	Economy Botany	3	Electives (One) ZOOL 425	[thnology	3	Core courses BIOL 450	Research Project	
BOTN 435	Plant Genetic Resources	3	BOTN 410	Ethnology Plant Cell & Tissue Culture	3	BOTN 410	Plant Cell & Tissue Culture	6
Electives (One)	Management)	BOTN 410		3	BIOL 415	Biodiversity Conservation	3
MBIO 435	Food Microbiology	3	Total	Pharmacognosy	3 18	ECOT 440	Ecotourism Development and	3
Z00L 435	Integrated Pest Management	3	Semester 2		10	LCOT 440	Management	3
Total	integrated rest management	18	Core courses			Electives (One)	Management	J
iotai		10	BIOL 425	Biotechnology & Development	3	Z00L 410	Insect Anatomy & Physiology	3
Zoology Option	n		MBIO 410	Soil Microbiology	3	Z00L 420	Ichthyology	3
YEAR 3	•		Z00L 435	Integrated Pest Management	3	Z00L 425	Ethnology	3
Semester 1			BIOL 405	Applied Ecology	3	Total	Lamology	18
Core courses			Z00L 420	Ichthyology	3	Semester 2		
Z00L 201	Parasitology	3	Electives (One)	,,	_	Core courses		
BIOL 330	Biological Seminars	3	MBIO 435	Food Microbiology	3	BIOL 425	Biotechnology & Development	3
MBIO 310	Immunology	4	BOTN 425	Economy Botany	3	MBIO 410	Soil Microbiology	3
MBIO 320	Molecular and Cellular Biology	3	Total	, , , , ,	18	Z00L 435	Integrated Pest Management	3
Z00L 305	Comparative Anatomy	3				BIOL 405	Applied Ecology	3
Electives (One)			Bio-Managem	ent and Utility Option		BOTN 425	Economy Botany	3
BOTN 315	Agro forestry	3	YEAR 3			Electives (One)		
NARS 362	Rangeland Resources	3	Semester 1			MBIO 435	Food Microbiology	3
MBIO 315	Microbiology and Human Welfar		Core courses			MBIO 440	General Mycology	18
BOTN 310	Plant Genetic Resources	3	Z00L 201	Parasitology	3		ry attachment will be taken at the	
Total		19	BIOL 330	Biological Seminars	3		year of study. And Attachment Re	
			MBIO 310	Immunology	4		he next immediate Semester (i.e. t	he 1st
						Semester 4th Yea	ır)	

For more information: Contact the Registrar Academic Affairs

MAIN CAMPUS - MERILP-20 Box 267- 60200. Meru, Kenya, Bel: 000 - 21184214/5.617, 0724 - 225 (162, 0724 - 3106.55, Fax: 064 - 3016.2, infosjkemu ac.ke
NAKIORU CAMPUS: Kende Plaza Pto. Box 45240-00100, Nairobi, Kenya, Tel: 020 - 2247987/2248172, 0725 - 751878, 0735 - 701 311, fax: 020 - 248160, nairobicampus@kemu.ac.ke
NAKIORU CAMPUS: Marche Plaza Pto. Box 3654 - 20100, Nairobi, Kenya, Tel: 020 - 121214456, fax: 051-2215141, infosjkemu.ac.ke
NARIMATI CENTRE: Methodicis Rural Tianiang Centre, Pto. Box 22 - 60215. Marimanti, Kenya Tel: 020 - 21184212/16/17, 0724 256 162, 0734 - 310 655, Fax: 064 - 30162, infosjkemu.ac.ke
NOMBASA CAMPUS: Pto. Box 8983 - 80100, Mombasa Kenya, Tel: 041 - 249594518, 0775 120282 07, 9711 90 932, infosjkemu.ac.ke
NYERI CAMPUS: Roware Building, Pt. O. Box 2255 - 10140, Nyeri Kenya, Tel: 061 - 2032904, 020 - 2118441, 0700-739 938, 0735 601 884, Fax: 061 - 2034100, infosjkemu.ac.ke
MAUA CENTRE: Maua Methodici Hopjati Sacro Building, Pt. 080 x 267 - 60200, Meru. Kenya, Tel: 061 - 2018419, infosjkemu.ac.ke
MAUA CENTRE: Maua Methodici Hopjati Sacro Building, Pt. 080 x 267 - 60200, Meru. Kenya, Tel: 063 - 31841, 07187 090, infosjkemu.ac.ke



The future is here



Bachelor of Science in Applied Biology