هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission
اعتماد
NCAAA
2024
TP-153

Course Specification
(Bachelor)

Course Title:	**Breeding Ecology of Camels**
Course Code:	**EVS 1470**
Program:	**Bachelor of Science in Environmental Science**
Department:	**Biology**
College:	**Science**
Institution:	**Imam Mohammed Ibn Saud Islamic University**
Version:	**1**
Last Revision Date:	-

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A. General information about the course:

1. Course Identification

1. Credit hours: 3 (Lecture 2+ Lab 2)					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (7th Level/ 4th Year)					
4. Course General Description:					
This course provides an in-depth exploration of the breeding ecology of camels, focusing on the biological, ecological, and behavioural aspects that influence camel reproduction and population dynamics. Participants will gain a comprehensive understanding of the reproductive physiology of camels, mating systems, breeding strategies, and the environmental factors affecting their reproductive success.					
5. Pre-requirements for this course (if any)**:**					
EVS1110 EVS 1111					
6. Co-requisites for this course (if any)**:**					
None					
7. Course Main Objective(s):					
1. Understand the anatomical and physiological aspects of camel reproduction. 2. Identify the different mating systems and breeding strategies employed by camels. 3. Analyze the environmental factors influencing camel reproductive success and population dynamics. 4. Evaluate the role of genetics in camel breeding and conservation. 5. Discuss the challenges and opportunities in camel breeding programs for sustainable agriculture and livestock production.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	√	100%
2	E-learning	-	-
3	Hybrid • Traditional classroom • E-learning	-	-
4	Distance learning	-	-

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	24
2.	**Laboratory/Studio**	0
3.	**Field**	0
4.	**Tutorial**	0
5.	**Others (specify)**	-
Total		24

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Outline the biological characteristics and adaptations of camels that influence their breeding ecology.	K1	Two credits weekly lectures	-Quizzes -Presentations -Assignments -written exams
1.2	Discuss the reproductive physiology of camels, including the estrous cycle, mating behavior, and gestation period.	K2	Two credits weekly lectures	Quizzes -Presentations -Assignments -written exams

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.3	State the strategies of camels in their native habitats and the factors that influence successful breeding in captivity.	K2	Two credits weekly lectures	Quizzes -Presentations -Assignments -written exams
1.4	Clarify how environmental factors such as climate, food availability, and habitat quality impact camel breeding patterns and reproductive success.	K3	Two credits weekly lectures Two credits weekly lectures	Quizzes -Presentations -Assignments -written exams
1.5	Explain the role of breeding ecology in camel conservation efforts, including captive breeding programs, habitat conservation, and genetic diversity preservation.	K4	Two credits weekly lectures Two credits weekly lectures	Quizzes -Presentations -Assignments -written exams
2.0	Skills			
2.1	Perform research through hands-on fieldwork, data collection, and analysis related to camel breeding ecology.	S1	-Two credits weekly lectures -Tutorials	-Presentations -Assignments -written exams
2.2	Analyze data on various aspects of camel breeding ecology using the various statistical methods	S2	-Two credits weekly lectures -Tutorials	-Presentations -Assignments -written exams
2.3	Apply the information theory, maximum likelihood estimation, and generalized linear modelling in studying wildlife populations	S3	-Two credits weekly lectures -Tutorials	-Presentations -Reports
3.0	Values, autonomy, and responsibility			
3.1	Share in discussions on how and why species are monitored and/or captured for wildlife population management.	V1	Group discussions	-Presentations -Reports
3.2	Participate in specialized meetings and present data through different modes.	V2	Group discussions	-Presentations -Reports
3.2	Show independency in carrying out research studies in the field	V3	Group discussions	Presentations -Reports

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	of wildlife conservation and management			

C. Course Content

No	List of Topics	Contact Hours
1.	**Introduction, Syllabus.** Introduction and History of Wildlife Conservation Perspectives and philosophical perspective; Cultural foundation	4
2.	**Introduction to Camel Biology** Overview of Camel Species Physical Characteristics and Adaptations Behavioural Ecology of Camels	4
3.	**Reproductive Physiology of Camels** Female Reproductive Anatomy and Physiology Male Reproductive Anatomy and Physiology Hormonal Regulation of Reproduction	4
4.	**Breeding Strategies in Native Habitats** Natural Breeding Behaviour Seasonal Breeding Patterns Mating Systems and Strategies	2
5.	**Environmental Influences on Breeding** Impact of Climate on Reproduction Food Availability and Nutritional Requirements Habitat Quality and Breeding Success	2
6.	**Breeding Management Techniques** Artificial Insemination in Camels Breeding Season Manipulation Genetic Selection and Breeding Programs	2
7.	**Reproductive Health and Care** Common Reproductive Disorders Veterinary Care and Reproductive Health Management Nutrition and Reproductive Health	2
8.	**Conservation and Breeding Ecology** Captive Breeding Programs	2

	Habitat Conservation and Restoration Genetic Diversity and Population Management	
9.	**Ethical and Welfare Considerations** Ethical Issues in Camel Breeding Animal Welfare and Husbandry Practices Human-Camel Interactions and Cultural Perspectives	**2**
10.	**Research Methods in Camel Breeding Ecology** Field Research Techniques Data Collection and Analysis Methods Research Ethics and Integrity	**2**
11	**Communication and Reporting** Writing Research Reports Presenting Findings and Data Peer Review and Publication	**4**
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm exam 1	Around 4th - 5th week	15%
2.	Midterm exam 2	Around 7th - 8th week	15%
3.	Quizzes, Participation, Attendance, Presentations, Essays	During the semester	10%
4.	Final Lab Exam	15th week	20%
4.	Final Exam	16th week	40%
Total			**100%**

* Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	1- "The Camel: Its Evolution, Ecology, Behaviour, and Relationship to Humans" by Shirley C. Strum and Linda M. Fedigan 2- Camel Breeding and Genetics" edited by Faisal M. Almathen, Hanotte O., and K. E. Fitzhugh

Supportive References	
Electronic Materials	1- International Camel Consortium for Genetic Improvement Offers information on camel genetics, breeding programs, and conservation initiatives. 2- Camel Research Centre (CRC) CRC's website offers research articles, publications, and information on camel biology, reproduction, and management.
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom and laboratories
Technology equipment (Projector, smart board, software)	Projector, smart board
Other equipment (Depending on the nature of the speciality)	Environment-related instruments

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Direct
Effectiveness of students' assessment	Program leader	Direct
Quality of learning resources	Peer reviewer	Indirect
The extent to which CLOs have been achieved	Program leader	Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Head of Biology Department
REFERENCE NO.	
DATE	