UNIVERSITY of NICOSIA

Year 2

Course Title	Animal breeding and lambing rotation				
Course Code	Vet-207				
Course Type	Required				
Level	Undergraduate				
Year / Semester	Year 2/ Semester 2				
Teacher's Name	**Course Lead:** Dr Catalina Cabrera **Contributor:** Dr. Marios Christoforou				
ECTS	3	Lectures/week	3	Tutorials and farm visits/week	2
Course Purpose and Objectives	The main objectives of the course are: ● Develop a comprehensive understanding of pregnancy in various animal species, including maintenance, diagnosis, fetal nutrition and circulation, termination, and common pathologies associated. ● Gain knowledge related to normal and abnormal parturition, fetal adaptation, neonatal care, and the overall well-being of both the neonate and the dam. ● Understand the postpartum period, including the process of placental expulsion, uterine repair, resumption of ovarian function, and the identification and management of pathologies linked to this critical phase. ● Understand the lactation process, with emphasis on hormonal regulation, mammary gland development, milk production, common pathologies, and udder health. ● Gain species-specific insights into reproductive practices and potential complications, while understanding the veterinarian's crucial role in the prevention, diagnosis, treatment, and management of reproductive challenges including ethical considerations. ● Emphasize practical applications with a specific focus on lambing, integrating theoretical knowledge to enhance hands-on skills in managing and assisting with the lambing process.				

Learning Outcomes	The following list provides the learning objectives that will be covered in the lectures, lab practical sessions, and tutorials of each week: Week 1 LOBs covered during lectures: Pregnancy 1. Describe different pregnancy diagnostic methods for mare, cow, ewe, goat, sow, bitch, and queen, and identify the pros and cons of each method. 2. Discuss the natural regulation and hormonal maintenance of pregnancy in the different species. 3. Identify pregnancy termination procedures and ethical considerations specific to each species. 4. Understand the complexities of fetal nutrition, fetal circulation, and associated adaptations and their implications for overall fetal health. 5. Summarize embryonic development and fetal growth. 6. Describe the fetal mobility during pregnancy. 7. Demonstrate understanding of pregnant dam care and preparation for birth. 8. Identify and analyze common pathologies associated with pregnancy, fostering the ability to recognize, diagnose, and ethically manage such conditions. Week 2 LOBs covered during lectures: Parturition 9. Discuss fetal maturation and the initiation of parturition. 10. Explain the role of different hormones in the cascade of parturition. 11. Describe premature, delayed, and induced parturition. 12. Demonstrate understanding of the parturition process in domestic species and their differences. 13. Discuss fetal adaptations at birth, spontaneous respiration in the newborn, and thermoregulation. 14. Explain neonatal and dam care. Including colostrum intake, thermoregulation, and infection prevention. 15. Recognize and analyze signs of abnormal parturition and early detection. 16. Introduce complications of parturition/dystocia: causes, prevention, and intervention for improved neonatal and maternal outcomes. 17. Recognize the implications of dystocia 18. Discuss the introduction to obstetrics. Week 3

LOBs covered during lectures:

Postpartum and Lactation

19. Discuss the physiological mechanisms and factors influencing placental expulsion during the postpartum phase.
20. Understand the postpartum uterine repair process and resumption of ovarian function.
21. Introduce pathologies associated with the postpartum period.
22. Explore the lactation process, focusing on hormonal regulation of mammary gland development, milk letdown, and sustained milk production.
23. Introduce pathologies related to lactation; recognize, diagnose, and ethically manage issues affecting udder health and milk production.

Tutorial: Apply theoretical knowledge from previous classes to analyze and solve clinical cases.

Week 4

LOBs covered during lectures:

Small Ruminant Reproductive Practices

24. Gain knowledge in the reproductive practices of small ruminants, covering breeding techniques, artificial insemination, and mating strategies.
25. Identify and evaluate potential reproductive complications, addressing concerns related to fertility, pregnancy, and neonatal health.
26. comprehensive proficiency in lambing management and assistance.
27. Understand the veterinarian's integral role in managing reproductive challenges unique to small ruminants.
28. Apply ethical considerations in small ruminant reproductive management.
29. Acquire practical proficiency in identifying reproductive issues in small ruminants through the application of tools like ultrasound, hormonal assays, and clinical examinations.
30. Investigate and apply preventive measures to address reproductive challenges, vaccination protocols, biosecurity measures, and strategic herd management practices.

Laboratory practice: Pregnancy diagnosis and placentation

Week 5

LOBs covered during lectures:

Pigs and Cattle Reproductive Practices

31. Explain breeding approaches, artificial insemination, and natural mating techniques specific to these species.

32. Identify and evaluate potential reproductive challenges in cattle and pigs (fertility, gestation, and neonatal well-being)
33. Learn diagnosing methods to address reproductive challenges.
34. Apply ethical considerations, ensuring humane and responsible treatment.
35. Familiarize with diagnosing reproductive issues.
36. Learn about preventive measures addressing reproductive challenges, integrating industry-recommended vaccination protocols, biosecurity measures, and effective management strategies.

Week 6

LOBs covered during lectures:

Equine Reproductive Practices

37. Acquire knowledge of equine reproductive practices, encompassing breeding techniques and artificial insemination.
38. Recognize and assess potential complications in equine reproduction, including infertility, pregnancy disorders, and neonatal issues.
39. Understand the veterinarian's critical role in preventing, diagnosing, and treating reproductive challenges in equines, emphasizing the maintenance of optimal reproductive health.
40. Understand the use of tools for equine reproductive diagnosis such as ultrasound, hormonal assays, and clinical examinations.
41. Explore and implement preventive measures to mitigate reproductive challenges in equines, focusing on vaccination protocols, and biosecurity measures.

Small Animal Reproductive Practices

42. Learn reproductive practices such as breeding methods, artificial insemination, and natural mating techniques.
43. Identify and assess potential reproductive complications in small animals, addressing concerns related to fertility, gestation, and neonatal health.
44. Learn about diagnosing reproductive issues in small animals, utilizing diagnostic tools such as ultrasound, hormonal assays, and clinical examinations.
45. Explore and apply preventive measures to address reproductive challenges.

Week 7

Farm visits: Swine

- Pregnancy diagnosis
- Husbandry and management of pregnant animals and newborns
- Parturition management practices and protocols

	• Colostrum management, record keeping, processing. • Postpartum and lactation Week 8 **Farm visits:** Small ruminants/cows • Husbandry and management of pregnant animals and newborns • Parturition management practices and protocols • Colostrum management, record keeping, processing. • Postpartum and lactation management, milking, record keeping, milk production, breeding history, etc.		
Prerequisites	None	Required	None
Course Content	**Lecture Topics:** • Comprehensive understanding of pregnancy • Pregnancy diagnosis • Introduction to pathologies of pregnancy • Insights into parturition • Care of parturient animals • Stages of parturition • Introduction to dystocia and obstetrics • Postpartum process • The puerperium and the care of the newborn • Lactation process • Small Ruminant Reproductive Practices • Pigs and Cattle Reproductive Practices • Equine Reproductive Practices • Small Animal Reproductive Practices • Practical Applications in Lambing		
Teaching Methodology	Lecture-based learning, farm visits, and small group tutorials		
Bibliography	1. Pathways to pregnancy and parturition, Senger. 2. Reproductive technologies in farm animals 3. Small animal Theriogenology 4. Arthur's Veterinary Reproduction and Obstetrics NOAKES 5. Canine Reproduction and Neonatology GREER 6. Reproduction in mammals 1-7. Austin and Short. 7. Essential Reproduction. Johnson. 8. Veterinary Endocrinology and Reproduction. McDonald. 9. Current therapy in large animal theriogenology		
Assessment	Course assignment 30%, Final exam 70%		
Language	English		