

Jordan University of Science and Technology
Faculty of Veterinary Medicine
Equine Theriogenology
First Semester, 2023/2024

Course Information	
Course Title	Equine Theriogenology
Course Number	VM 495
Prerequisites	VM 354
Course Website	JUST e-learning web site and Google Drive
Course Instructor	Dr. A. Talafha
Class rooms	Online
Course Description	
This class is designed to teach you normal reproductive process, reproductive management, and control of the reproductive cycle, normal and pathology of pregnancy, parturition, and postpartum period as it occurs in horses. In addition, basic reproductive management and diseases of horses will be covered in this class. Previous courses covering the fundamental aspects of reproductive anatomy, histology, embryology, physiology, pharmacology, infectious diseases and pathology will serve as a basic and essential background for the material presented in this course	

Course Objectives
By the end of the course, the student should understand: a) Reproductive Physiology of the Non-Pregnant Mare b) Control and Synchronization of Estrous Cycle and Ovulation c) Mare Reproductive Tract Infections and Treatment Options d) Infertility in the Mare e) Physiology of pregnancy and pregnancy diagnosis f) Abnormalities of Gestation in mares g) Normal Parturition and puerperium period in Mares

Teaching Style
Materials will be presented in a lecture format.

Text Book
1) Manual of Equine Reproduction. T. Blanchard et al., 2011

Useful Resources	
1.	Arthur et al., Veterinary Reproduction and Obstetrics -Eight editions, 2001
2.	Current Therapy in Theriogenology. Youngquist and Thretfill. 2007, Publisher Saunders
3.	Course notes, lectures references lists and PowerPoint lectures posted on JUST e-learning system or Google drive link

Assessment Policy		
Assessment Type	Expected Due Date	Weight
Midterm exam	As per JUST exam calendar	50%
Final theoretical Exam	As per JUST exam calendar	50%
Exam questions will be of essay and/or multiple choice type. A legible, organized, concise and grammatically correct answer will be expected in order for credit to be received. Answers should contain information required to explain the concept in question to another undergraduate student. Outlining your answer into pertinent points is acceptable and the suggested method of answering these essay questions provided the interrelationships between points are indicated. A student missing an exam will be allowed to make up the exam provided that a documented, valid reason for missing the exam exists. Whenever possible, these problems should be discussed with the instructor in advance. A missed exam will be considered as "0". Grades: Actual grades on exams will be the sum of the points that a student receives for correct responses expressed as a percentage of the total points possible on the exam. The average percent final grade will be determined by averaging the percent scores for all material.		

Attendance Policy
Students are expected to attend classes. Consequently, students are responsible for all material presented or assigned during the scheduled class periods and are expected to obtain such information on their own should a class period be missed. Whenever possible, absences will be discussed with the instructor in advance. Class attendance will be taken in lecture and during laboratory exercises. Absences in excess of the number allowed by JUST regulations will result in the student failing in the course.

Equine Theriogenology Lectures

Table of content

Topic #	Topic
1	● Reproductive Physiology of the Non-Pregnant Mare: The Estrous Cycle ○ Mare Reproductive Tract ○ Estrous Cycle ○ Positive and negative feedback relationships among various reproductive organs ○ Hormonal profile during estrous cycle in mares ○ Follicular wave patterns during the equine estrous cycle ○ Tactile and visual changes of tubular genitalia during estrous cycle in the mare ○ Vaginal fornix and cervix during mare estrous cycle

	○ Teasing, signs of estrus and diestrus
	○ Normal uterus during estrus
	○ Prediction of Ovulation Time, development of preovulatory follicles
	○ CL development, follicular and luteal phases
	○ Reproductive Seasonality In Mares
	○ Breeding cycle of the mare
	● Control and Synchronization of Estrous Cycle and Ovulation
	○ Termination of Diestrus with PGF2 α
	○ Ovulation induction
	○ Lengthening luteal phase with Progestens
	○ The Noncycling Mares
	○ Hormonal methods to hasten 1 st ovulation of the year
	○ Postpartum Mares
	○ references
2	● Mare Breeding Soundness Examination
	○ Components of BSE, history, physical and reproductive examination
	○ Caslick's index
	○ Transrectal and U/S of genital tract
	○ Vaginal speculum, uterine cytology
	○ Uterine culture, uterine biopsy
	○ Kenney-Doig endometrial biopsy categories
	○ Endoscopy
3	● Mare Reproductive Tract Infections and Treatment Options
	○ Disease classification
	○ Treatment of genital infection
	○ References
4	● Infertility in the Mare
	○ Gonadal dysgenesis
	○ Estrous cycle abnormalities
	○ Abnormal Perineal (Vulvar) Conformation
	○ Urovagina
	○ Cervical Abnormalities
	○ Diseases of Endometrium
	○ Equine Cushing's Disease (ECD)
	○ Ovarian Granulosa -theca cell tumor
	○ Ovarian Hematoma
	○ Anovulatory follicles
	○ Aging
	○ DDx of small/inactive and enlarged ovaries in mares
	○ References
5	● Physiology of Pregnancy and Pregnancy diagnosis In Mares
	○ Development of the conceptus
	○ Some significant events in establishment of pregnancy in the mare
	○ Placenta
	○ Umbilical Cord
	○ Hippomanes

	○ Fetal Gonads
	○ Hormonal and reproductive changes during pregnancy
	○ Duration of pregnancy
	○ Pregnancy Diagnosis in Mares (rectal palpation)
	○ Ultrasound Examination
	○ References
6	● Abnormalities of Gestation in mares
	○ Causes of Embryonic Death: Ball's classification
	○ Criteria for predicting embryonic death
	○ Management of mares with signs of abnormal embryonic development
	○ Placental Dysfunction
	○ Uterine Torsion
	○ Hydrops of the fetal membranes
	○ Ventral Hernia and Prepubic Tendon Rupture
	○ Premature Placental Separation
	○ Twinning
	○ Abortion in Mares
	○ Mare reproductive loss syndrome (MRLS)
	○ References
7	● Normal Parturition and puerperium period in Mares
	○ Signs of impending parturition in mare
	○ Parturition
	○ Normal Postpartum Events in Mares
	○ Newborn foal
	○ Induction of Parturition
	○ References
8	● Postpartum problems in the mare
	○ Retained placenta
	○ Postpartum metritis
	○ Vulval And Perineal Trauma
	○ Recto-vaginal Fistula
	○ Perineal laceration
	○ Ruptures Of Cervix And Vagina
	○ Uterine Rupture
	○ Broad ligament Hematoma
	○ Uterine Prolapse
	○ Hypocalcaemia
	○ Management Of Engorged Mammary Gland